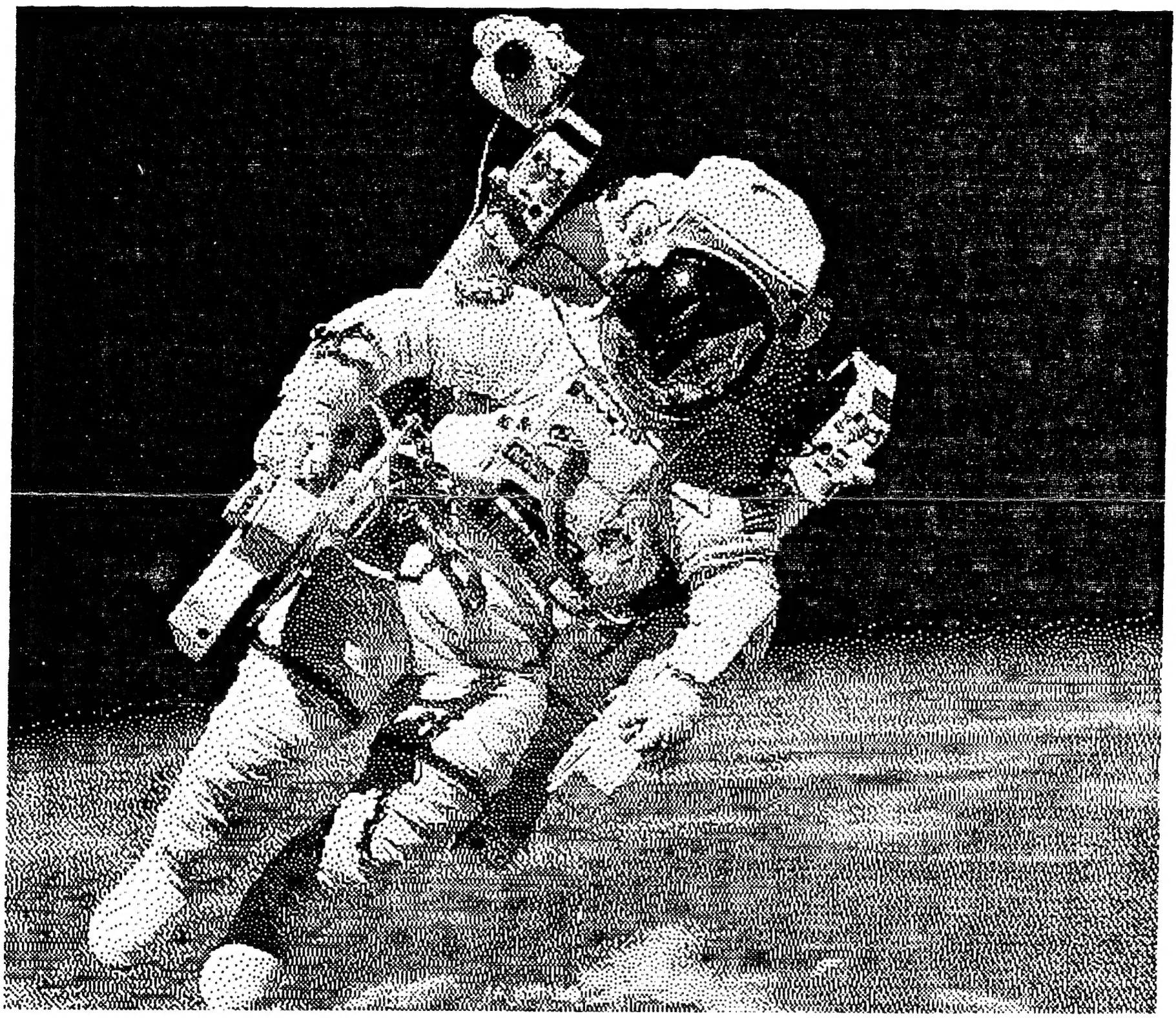
SINC-LINK

SEPT-OCT '92 VOL 10-5



BIG FALL 1992 ISSUE

TORONTO TIMEX-SINCLAIR USERS CLUB

SINC-LINK

SEPT-OCT '92 VOL 10-5

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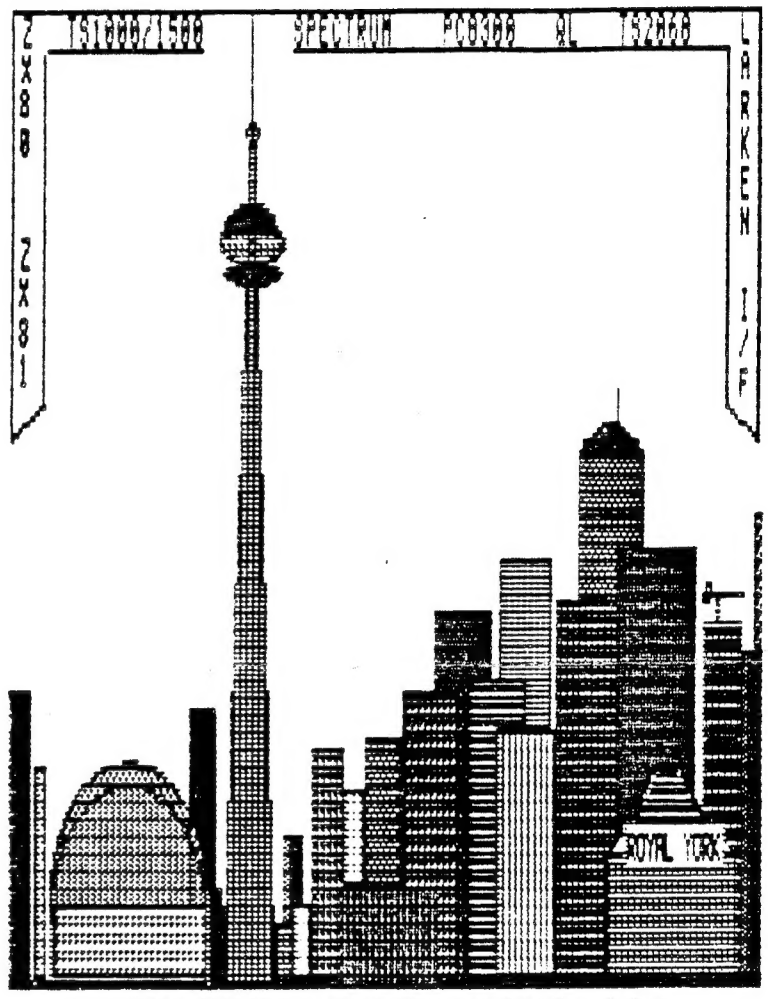

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TORONTO TIMEX-SINCLAIR USERS CLUB

Editorial

Well, a few things have happened in the club recently. If you check the blurb inside the cover, you will see that the newsletter-only subscription and the single issue price have been removed. These two features were holdovers from the days when the newsletter consisted of six or seven double-sided pages. Anyway, it simply was not economically feasible to continue to offer these options and while we are not out to make money, we certainly aren't out to lose it. So, for your $20.00 you get six issues of Sinc-Link, access to our extensive Larken and QL disk libraries, our 2068 and ZX-81 tape libraries, the book library and our huge exchange-newsletter compilation. Not a bad deal, we think.

The QLers are going to get a special interest group (SIG). We have found that we simply cannot cover all the bases during our club meetings so the QLers will be meeting at a time and location to be determined. Initially these SIG meetings will take place at Hugh Howie's home in Burlington. Hugh will continue to look after the QLers' interests and of course, Sinc-Link will continue to be their newsletter.

For those of you readers with the SMUG digitizer, I have finally produced a review of Robert Shade's adaptation of John McMichael's *VIDEOTEX* program. About time, eh?

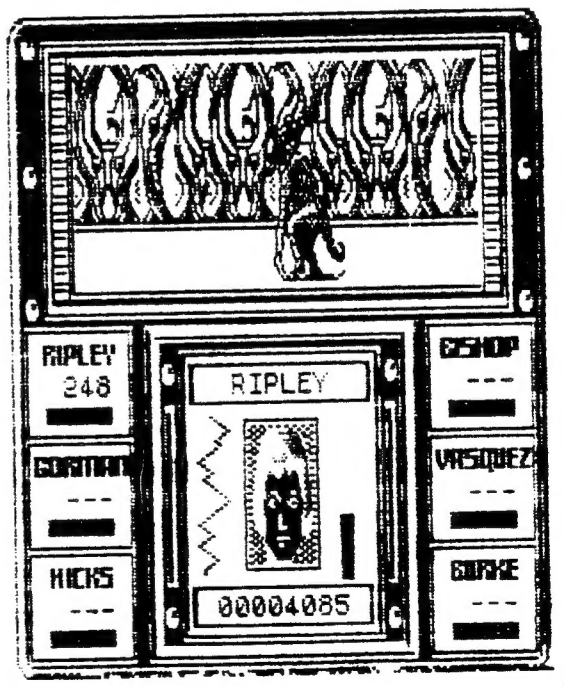
The cover photo was produced on the 2068 using *The Print Factory*. It started out as an IBM GIF, was converted to a WordPerfect graphic, transferred to the 2068, converted to PF format then printed on my nine pin Star. Aren't graphics neat?

That's it for now...

J.T.

Help - ALIENS!

Does anyone have the 48K Spectrum program *ALIENS*? This is the adaptation of the second movie in the ALIENS trilogy. Anyway, I have managed to get the Ripley character to the Queen's room (see screen$) and even shot the beastie but all that happens is that I am returned to the start room. Back issues of various UK magazines allude to different levels, elevators and even other crew members, but I have yet to find any of these features. I have scoured the instructions but cannot find any new info, even though the box screen$ shows a room number 2121 (for only about 270 rooms?). Any tips would be greatly appreciated. Please contact me via the club. Thanks in advance. Jeff Taylor



Now what happens?

A PROGRAMMING EXERCISE
by G.Chambers

Recently one of our members, Robert Shade, sent me a suite of disks. These disks had a menu routine which I thought was interesting. I could not resist reworking parts of it. It became an interesting programming exercise, which I thought I would share with other club members.

We tend to assume that everyone knows how to program, forgetting that there are many who may not be adept at it. I hope that this description may be useful to these members.

The listing is below, and following it are comments on the intent of each program line.

```
  1 REM        DISK MENU
  2 GO TO 5
  3 CLEAR 26000: BORDER 0: PAPE
R 0: INK 0: CLS : RANDOMIZE USR
102: GO TO 10
  4 PRINT USR 64300: PRINT CHR$
2
  10 CLEAR 65366: PRINT USR 100:
OPEN #4,"dd"
  20 LET X=7: DIM C$(X,9)
  30 DATA " HELP! HELP! HELP! ",
" "
  40 DATA "LORDS OF CHAOS","LORD
CH.C1","SAMURAI","SAMURI.C1","BL
ACK LAMP","BKLAMP.C1","DAN DARE
II","DANDAR.C1","RED DOOR","RDLO
AD.B1","CHUBBY GRISTLE","CHUBBY.
C1"
  50 DATA " "
  60 DATA " "
  80 POKE 23658,8
  90 PRINT #4: POKE 8200,16350:
RANDOMIZE USR 23310
 100 BORDER 1: PAPER 1: INK 6: C
LS
 110 PRINT AT 1,4; INVERSE 1;"
                          ";AT 2,4;"
   SPECTRUM GAMES DISK  ";AT 3,4
;"                          ": INV
ERSE 0
 120 RESTORE 30: PRINT AT 5,0: F
OR N=1 TO X: READ D$: PRINT TAB
2; PAPER 3; INK 7;"<";N;">"; PAP
ER 1;TAB 7; PAPER (1 AND N<>1)+(
7 AND N=1); INK (6 AND N<>1)+(2
AND N=1);D$; INK 5;(" GAME" AND
N<>1 AND N<>3 AND N<>6)+(" DEMO"
 AND N=3)+(" ADVENTURE" AND N=6)
: PRINT
 130 READ C$(N)
 140 NEXT N
 150 PRINT AT 21,8; PAPER 0; INK
 6;" SELECT BY NUMBER "
 160 PAUSE 0: LET JUMP=CODE INKE
Y$-48: IF JUMP>X THEN  GO TO 160
 170 IF JUMP=1 THEN  GO TO 3000
 180 IF JUMP=2 OR JUMP=6 THEN  P
RINT #4: LOAD C$(JUMP)CODE
 190 GO SUB 200: RANDOMIZE USR 1
00: LOAD C$(JUMP)CODE
 200 BORDER 0: PAPER 0: INK 0: C
LS
 210 PRINT #4: LOAD ("SAMSC1.C1"
 AND JUMP=3)+("BLPSC1.C1" AND JU
MP=4)+("DANSC1.C1" AND JUMP=5)+(
"CHUBSC.C1" AND JUMP=7)SCREEN$ :
 PAUSE 300
 220 IF JUMP=3 THEN  PRINT #4: L
OAD C$(JUMP)SCREEN$ : PAUSE 300
 230 RETURN
3000 GO SUB 5000
3010 RANDOMIZE USR 100: PRINT "h
elp07.CT": PRINT CHR$ 2: PRINT '
"End of File...Press key for men
u"
3020 PAUSE 0: GO TO 1
5000 INK 0: PAPER 7: BORDER 7: C
LS
5010 IF PEEK 60900<>124 THEN  RA
NDOMIZE USR 100: LOAD "taswi.Cs"
CODE
5020 RANDOMIZE USR 60826: RANDOM
IZE USR 60899: RANDOMIZE USR 643
00: PRINT CHR$ 3: RETURN
8000 INK 0: PAPER 7: BORDER 7: C
LS : LIST : STOP
9000 CLEAR 27000: RESTORE 9030:
FOR n=23300 TO 23309
9010 READ a: POKE n,a
9020 NEXT n
9030 DATA 205,102,0,62,3,211,244
,201,0,0
9040 RANDOMIZE USR 23300
9050 RUN
9994 STOP
9995 RANDOMIZE USR 100: SAVE "ME
NU.B1" LINE 10
9996 STOP
```

A PROGRAMMING EXERCISE ¬ DISK MENU
Program description

LINE 3 ¬ This is the line used to save the program as a SPECTRUM AUTOSTART. That is to say, you must have a Spectrum ROM manually switched in when you want to use this AUTOSTART menu. If you want to use the Spectrum EPROM mounted on the Larken cartridge you would use Line 9000.

The CLEAR 26000 is used to ensure that the AUTOSTART file is less than one Larken disk track in length (5090 bytes). The SAVE starts at memory address 22490, and continues to the address 26000. We could have used a Clear 27500 (27500¬22490=5010), if we had needed more room for the menu program, and still use only one track.

LINE 4 ¬ We jump skip over Line 4 since this entry is needed only after the HELP file has been called up. If we do a USR call to 64300 without the "taswi.Cs" code in place the computer will crash. See Line 5010 description).

We clear the screen before saving the file, simply for neatness. RAND USR 102 is the Larken AUTOSTART SAVE command.

LINE 10 ¬ Clears the computer memory to just below the User¬defined graphics area of memory. Also opens the TS2068 Channel 4 to the abbreviated Larken disk command "PRINT #4:"; used instead of "PRINT USR 100:".

LINE 20 ¬ Sets variable "X" to the number of options to appear on the screen. Also dimensions the C$ array. The C$ array is used to hold the Larkenized program names held in the data statements of Lines 30 to 60.

LINE 30 ¬ We have put the HELP option in a separate LINE. Line 120 could be simplified if you wish to use imbedded colour codes in this "HELP" data. Note there are two pieces of data in this line; the second being simply a space. The "space" data is stored in the first entry of the C$ array. We don't actually make use of it; it is needed to regularize the menu display. Delete this "space" data, and you will see what I mean.

LINE 40 ¬ This data line and Lines 50 and 60 are used to hold two sets of data. First the program name which is to appear on the menu screen, followed by it's Larkenized loading name.

LINE 80 ¬ Ensures we are in the "Caps" mode.

LINE 90 ¬ This line boots some code stored at 23310 into the Larken RAM; and sets a Larken pointer toward it. This code needs to be loaded into memory before either RUNning or doing an NMI¬Save. Otherwise the program will crash. See the article entitled TS2068¬Larken NMI¬key, in the Jan/Feb'92 Issue of Sinc¬Link for a full description.

LINES 120/140 ¬ This FOR NEXT loop gets the program names on the screen and the corresponding Larken load names into the C$ array. The Line 120 is somewhat convoluted. There are two things of interest. First, we differentiate between the paper/ink colours used in Line 1 and the remaining lines. This is done by the portion of the line which reads as follows:

...PAPER (1 AND N<>1)+(7 AND N=1); INK (6 AND N<>1)+(2 AND N=1)..

Then secondly we define the game description on each screen as GAME, ADVENTURE, or DEMO. This uses the same programming technique as above. The pertinent segment is as follows.

...(" GAME" AND N<>1 AND N<>3 AND N<>6)+(" DEMO" AND N=3)+(" ADVENTURE" AND N=6)...

LINE 160 ¬ The "PAUSE 0" holds the program at this point until a key is pressed. We use the variable "JUMP" to hold the code of the key that is pressed. We subtract 48 from JUMP so that it corresponds exactly to the key number on the keyboard, which will be between 1 and 7 (since "x" is 7). If JUMP is greater than 7 then the line loops.

LINE 170 ¬ If menu option 1 is selected (HELP), then we go to LINE 3000.

LINE 180 ¬ Some of the games programs in this menu have a SCREEN which we wish to load and display for a few seconds before loading the program proper. However, there is no SCREEN$ file for the program options 1 and 6 so we proceed to load them immediately.

LINE 190 ¬ If we selected options other than 1 or 6 this line will loop (GOSUB) to line 200 to load a SCREEN$, before returning to load the program.

LINE 210 ¬ In this Line we load one of several screen options, depending on the value of the variable "JUMP". Remember, the value of "JUMP" was determined by our menu selection in Line 160.

LINE 220 ¬ Here one of the programs (menu item 3) has a second SCREEN$ to display.

LINE 230 ¬ Returns to Line 190, to finish loading the game program.

LINE 3000 ¬ Part of the HELP option. We GOSUB to Line 5000 to load "taswi.Cs".

LINE 3010 ¬ The Tasword "help07.CT" file is displayed onscreen. Pressing the no¬scroll "n" key, or Breaking out of the program causes the program to GOTO Line 4, where the instruction "PRINT USR 64300: Print CHR$ 2" causes the computer to revert to the 32 chr$¬per¬line mode.

LINE 5010 ¬ taswi.Cs contains two other Spectrum m/c routines, to provide the same ON ERR GOTO routine available in the TS2068.
A check is made of address 60900 to see whether the code is already in place, to avoid unnecessary reloading.

LINE 5020 ¬ Three USR calls are made to the taswi.Cs code to activate three components of it. "RAND USR 64300: PRINT CHR$ 3" activates the 64 chars per line mode of taswi.Cs.

LINE 8000 ¬ Doing a GOTO 8000 clears the screen of any odd colours that may be present. Useful when debugging or testing a program mod.

LINE 9000 ¬ This is a m/c routine which is suitable when you wish to use this program as an AUTOSTART with the Spectrum EPROM on the Larken cartridge. The m/c data in Line 9030 is poked into memory, then a USR call is made to it. The code first does an AUTOSTART save, then, when the program is called up later, the remainder of the code does a bankswitching routine to switch from the TS2068 ROM to the Spectrum EPROM.

****

This is an updated version of an article that originally appeared in QL World.

Using the ALTKEY command to create "macros" in Quill.

As I indicated in an earlier column, if you have SuperToolkit II and a bit of extra memory the ALTKEY function can be used to save a lot of repetitive key pressing for routine operations while using the Psion programs - it's particularly useful with Quill. "Strings" of characters can be assigned to particular <ALT & key> combinations during your boot and these remain available until they are redefined or the machine is switched off. Some "Front End" programs like Taskmaster or Qram use similar combinations for other purposes, so you may have to change some of my suggestions, but there are plenty of others available since pretty well any key combination that prints a character can be used, this includes the CTRL and CTRL & SHIFT combinations that generate the funny foreign characters - although you may need a third hand to manage some of the combinations and ALT at the same time.

(Remember, you have to be holding down the "modifier" keys before you press the main letter key.) You can even assign some of the combinations that do not generate a screen character.

One pair you must avoid is <CTRL & 7>, since adding ALT to this combination freezes the machine completely, and a complete reset is required - even Minerva's soft reset is frozen.

The best way to assign your keys is to set up a special SuperBasic procedure that is called in the boot. Listing 1 shows a skeletal form for such a procedure, you should be able to flesh it out to suit your own needs. Some of the keys you have to press in Quill do not correspond to printable characters, but this does not mean they do not generate codes like the letter keys, it's just that they are intercepted as control codes by the operating system and never reach the screen driver. ALTKEY inserts codes into the keyboard buffer just as though they had been typed in, so you can still use CHR$() to put these codes into an ALTKEY definition, and, even better, you can assign them to strings just like printable characters. The only keys that do not generate codes in this way are the "modifier" keys SHIFT, CTRL, & ALT which are used in combination with other keys and modify their values. CAPS LOCK is also treated differently, although it does generate a code (225).

I like to assign the special codes for the function and arrow keys to short string variables with meaningful names at the start of the procedure. This avoids having to use the relatively meaningless CHR$() form during the body of the ALTKEY assignments; I find f3$ much easier to remember than CHR$(240) for example. (In case you didn't see my earlier article, you can find the code generated by one of the "special" keys or combinations using a mini basic program that you can type in directly as a command:

```
rep k: print code(inkey$(-1)),
```

This will print the code corresponding to any key or combination (even <ALT & key>) until your press <CTRL & space> or look them up in the manual.) If you want to assign combinations of keys that do not correspond to a screen character, e.g. <SHIFT + ENTER>, you must use the form "ALTKEY CHR$(254)". Most of them can be incorporated into your string with full effect, and this is the power of the method since even the non printing keys like <F3>, <up arrow> etc can be included in your assignment. If the ALTKEY assignment includes more than one string separated by commas an <ENTER> (= CHR$(10), also known as "line feed") is inserted between each string, and you can use this instead of lf$ if you like (see line 150). If you analyse the lines in the Listing you will see that the string can be normal characters in quotes, e.g. "laddress", a string variable e.g. F3$, or a function returning a string - FILL$() is the most useful here since it enables mimicing of repetive keystrokes (lines 165 & 185). These can be linked together with &s to make up a longer string.

To create an ALTKEY definition you

should load Quill, work out how to do what you want to do from the keyboard, and then write down the exact sequence of key strokes required (including <ENTER>s.) You then have to construct a string that duplicates them exactly. I will go through the effect of those in the listing line by line but leave the reader to analyse them to work out how they work. Since there is often confusion in listings between the numeral 1 and the letter l I should point out that they are all letter ls, except where obviously part of a number.

110 - 130 Assign values to string variables for use later in the PROCedure.

(127 You will have to either have a real time clock, or have set the clock if this is to be of use.)

135 <ALT & a> loads a file called "address_doc" from the default device. To my mind this is the answer to those who, like Reg Gilbert of Dartmouth, Nova Scotia, write in asking for a way to modify Quill to change the default margin and justification settings. Whatever you do there will be only one default set available. But you can save as many blank files set up for different purposes as you like, and it only takes a moment to load them if you set them up on different ALTKEYs. In my case "address_doc" contains my standard letterhead, and footer set to "none"!

140 <ALT & b> Selects/deselects the bold typeface; the other typefaces and "paint" can be set up similarly. You may not think this worthwhile since all it does is to replace two consecutive keystrokes with two simultaneous ones, but I find it avoids confusion between F3 and F4.

145 & 195 <ALT & B>, <ALT & 2> etc. Move the cursor to the bottom of the text, or a specific page number.

150 <ALT & d> goes straight to the "Delete" option in "Files" and lists the files on the default device on the screen.

152 <ALT & D> Inserts the current date in the form e.g. "1992 Jun 13" at the right hand end of an empty row.

155 <ALT & E> threatens to delete from the cursor to the end of the paragraph. It requires one more <ENTER> to complete this irrevocable operation; press <ESC> if you have got there in error! One other problem is that after using Erase (or Copy) the program may freeze on repeated use of <up arrow>. Save and re-load to avoid this - this is made easy by the next macros (slightly out of order):

175 <ALT & s> inserts a Yen sign at the cursor position and then saves the current document under the name "current_doc" on your default device. It then uses the search routine defined at line 130 to find the Yen sign, delete it and put the cursor back exactly where it was when you started. It assumes that there is already a file called current_doc and overwrites it; if there isn't then it will also add a "y" right at the beginning of your document. Remember to save under a distinctive name before you log off. If you are an international financier and use of the Yen sign proves an embarassment then it can be replaced with any character (or characters) of your choice.

160 <ALT & £> re-loads the file called "current_doc" and then searches out the Yen sign as above. I chose the £ sign for this since it is out of the way and difficult to strike by accident - the active file in Quill is overwritten by this one!

165 <ALT & m> moves the left margin five places to the right and the right margin ten places to the left. You could use this idea to re-set the default margins, justification etc., but it is only relative to the current settings and I think that

the solution under <ALT & a> above is better.

170 <ALT & P> prints the current document, whole, to printer.

180 <ALT & S> like <ALT & s> but doesn't change the name. N.B the Yen sign will be present in the saved file.

185 <ALT & Y> prints "Yours sincerely" and your name in the appropriate places, leaving 6 lines for a signature.

190 <ALT & ?> lists the files on the default device on the screen and waits for a file name to load. Press <ESC> to get out of it.

If you have worked through all these then you should now be able to design a set to suit your own needs. Incidentally these macros are much quicker if you have pressed <F2> to remove the instruction panel from the top of the screen, otherwise you have to wait while it needlessly prints out all its messages. To print the Yen sign press <CTRL & SHIFT & .(full stop)>.

Some extra odds and ends - special to SinkLink

In the last issue of SinkLink a reader has sent in a procedure called Windex to restore the windows after running one of those all too common programs which do not tidy up the windows properly on exiting. This is an obvious candidate for an ALTKEY command, but it needs to be put into one line form. Of course, if you have ALTKEY you will also have WMON, which does it in a single command; except that it doesn't reset the INK and PAPER colours. The assignment at line 310 in the listings will restore the monitor windows, although not with the Sinclair boot up colours - I find PAPER 6 too bright anyway. Although it occupies several lines on paper, it should be typed in as one long superBASIC line.

But, I don't particularly like the Sinclair monitor default windows anyway, my favorite set - the ones you get when you exit most of my programs is much more like the TV defaults, with a full width WINDOW#1 and a 50 character wide WINDOW#2 - that's because 50 characters is what I use as a maximum line length for listings for publications. This is given in line 330.

Don't type this in at your keyboard every time, include it in your boot. One reason that it was difficult to obtain the default colours is that, as you will see, I am fascinated with Boolean algebra and used it to differentiate between the various channels in a long FOR loop. (This one also OPENs the channels first - QDOS doesn't mind if you do this to an already OPEN channel.)

If you ever need to edit an ALTKEY expression, especially a long one like these do it this way: type ALTKEY'x',' and then press the old ALTKEY combination, which will appear after the quote, edit as rquired and don't forget to add the final quote! This saves a lot of typing.

Another use you may not have thought of is to store a number, I sometimes want to remember a memory address until after I have LOADed another program, which would wiped it out if I assigned it to a variable, so I put it onto an ALTKEY where it's available until I either switch off the machine, or reassign that key. Finally don't forget the punctuation and foreign character keys <CTRL & SHIFT & key>, all of these and even some of the non-printing combinations can be assigned different strings giving about 120 in all - if you can remember where they all are!

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Altkey Listings

If you have Toolkit II flesh this out to suit your needs, add it to the end of your Quill boot and include a call to "Altkeys" somewhere before Quill is EXEC_Wed.

```
100 REMark ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
105 DEFine PROCedure                          Altkeys
110 f2$=CHR$(236): f3$=CHR$(240): f4$=CHR$(244)
115 la$=CHR$(192): ra$=CHR$(200): REMark arrows
120 up$=CHR$(208): shdn$=CHR$(220): del$=CHR$(202)
125 lf$=CHR$(10): tab$=CHR$(9)
127 dt$=DATE$: dt$=dt$(1 TO 11)
130 search$=f3$&f3$&'s¥'&lf$&lf$&del$
135 ALTKEY'a',f3$&'laddress'&lf$
140 ALTKEY'b',f4$&'b'
145 ALTKEY'B',f3$&'gb'
150 ALTKEY'd',f3$&f3$&'fd?',''
152 ALTKEY'D',FILL$(tab$,5)&dt$
155 ALTKEY'E',f3$&'e'&lf$&shdn$&lf$
160 ALTKEY'£',f3$&'lcurrent'&lf$&search$
165 ALTKEY'm',f3$&'ml'&FILL$(ra$,5)&'r'
    &FILL$(la$,10)&lf$
170 ALTKEY'P',f3$&'p'&lf$&lf$&lf$
175 ALTKEY's','¥'&f3$&'sflp1_current_doc','','yy'
    &search$
180 ALTKEY'S','¥'&f3$&'s','','yy'&search$
185 ALTKEY'Y',lf$&FILL$(tab$,2)&'Yours sincerely,'
    &FILL$(lf$,6)&FILL$(tab$,4)&'Your Name'
190 ALTKEY'?',f3$&'l?'&lf$
195 ALTKEY'2',f3$&'g2'&lf$: ALTKEY'3',f3$&'g3'&lf$
200 END DEFine
```

These two ALTKEY assigments will "restore" useful windows for monitors; put them into your SuperBASIC boot

```
300 REMark <ALT & W> for Sinclair default sizes.
310 ALTKEY'W','window 512,256,0,0:cls:for i=0,2,1:
    j=not i:window#i,512-256*(i<>0),202-152*j,
    256*(i=1), 206*j:border#i,not j,0,6:
    ink#i,7-3*i:paper#i,(i+1e-10)^i+j:csize#i,0,0:
    cls#i',''
320 REMark <ALT & w> for Clase preferred sizes.
330 ALTKEY'w','open#1,con_:open#2,con_:window 512,
    256,0,0:cls:for i=0,2,1:j=not i:
    window#i,512-208*(i=2),202-152*j,0,206*j:
    border#i,not j,0,6:ink#i,7-3*i:
    paper#i,(i+1e-10)^i+j:csize#i,0,0:cls#i',''
```

ZX81 RESOURCES

Rene Bruneau 17 August 1992

64K UPGRADE

I have revised the 64k SRAM board to provide non-volatile memory above 32K. A revised component list, printed circuit, and layout are provided on the next page. If you have code or data above 32k that is to be protected, you should enable WRITE PROTECT before you turn the computer off. Turn off the write protect to modify data or run machine code that uses this area to store data. By the nature of the board design, the 8-16k block is also non-volatile, but is not protected from erasure or scrambling that could occur when the computer is turned on or off, or crashes.

Where Do Old ZX81 Programmers Go?

Having been introduced to computing through the ZX81,2068 or the QL, many users are 'upgrading' to the XT, or more likely, the 386 AT, selling off or putting their old systems in storage. I have no doubt that most users retain a lot of affection for their old computers. Over the last year or so, I have seen a number of Sinclair Emulators appear on the bulletin boards for Amigas and IBM clones, written by ex-Sinclair users, of course. Most recently, I downloaded an emulator for the ZX81 called Xtender, written by an old ZX81 programmer by the name of Carlo Delhaz. For those who remember, Mr. Delhaz published several programs in the magazine 'Your Computer' around 1983-1984.
The program will run on an XT, but a faster machine is preferred. The emulator is quite impressive, in that the display and keyboard work exactly like the ZX81. A suite of programs is included in the package. An added bonus is a complete DOS to access directories and files on the resident computer. For those who are interested in getting a registered copy of Xtender can write to:

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4651 BV Steenbergen
Netherlands

Enclose 50 Guilders (about $38.00 Can) and be sure to ask for documentation for the ZX81 programs that come with the emulator.

INSIGHT

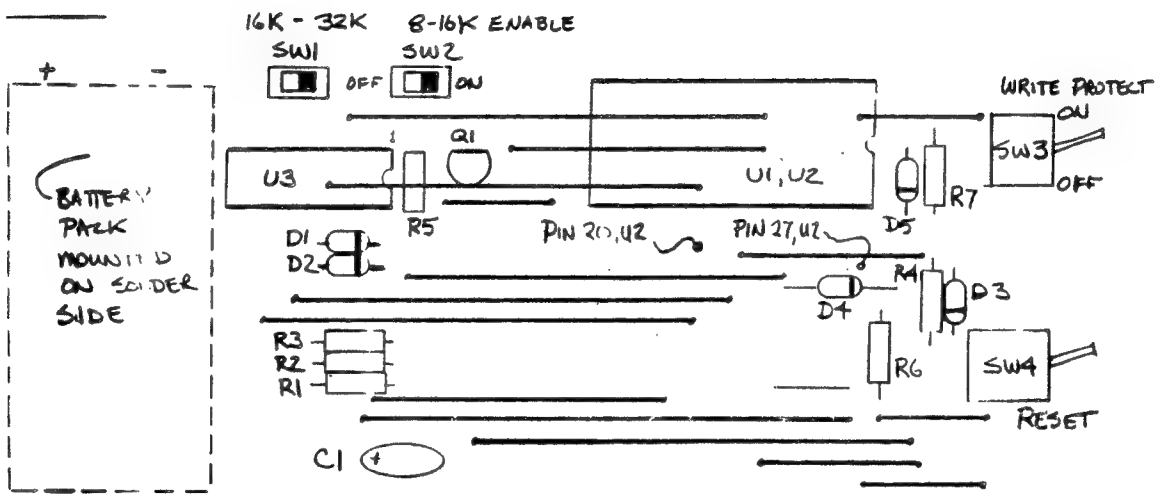
Many people, myself included, tend to view computers, VCR's and other electronic apparatus as black boxes. You turn them on, push some keys and they do what you want them to do....sometimes.
Once in a while you see something that gives you an insight into the inner workings of the machine. Not long ago, I picked up Mike Lord's 'Exploring The ZX81' and was reading through the section on how the display was generated. In a nutshell, The ULA (Undefined Logic Array; this is the chip closest to the TV modulator on the computer board) chip forces the Z80 chip (the CPU) to stop processing by issuing a HALT command. Because the Z80 was originally designed to work with dynamic ram (DRAM), it has provisions to refresh the ram automatically regardless of the halted state. It does this by cycling through the memory addresses and issuing a REFRESH signal. The ULA utilizes this feature to access the display file and character set to generate the TV display. Absolutely Machiavellian! Having just completed the 64k SRAM board, I suddenly realized why the RFSH line was ORed with the RD line to the static ram. When Hi-Rez basic is in operation, the SRAM is activated every time that REFRESH or READ is activated. With the code written by Wilf Richter, the ULA reads the SRAM rather than the character set in the ROM giving a true high resolution display. It is a pity that SRAM was so costly when Sinclair's design team made the ZX81 in the early 1980's, else we would have had Hi-Rez right from the beginning.

INSTANT PCB

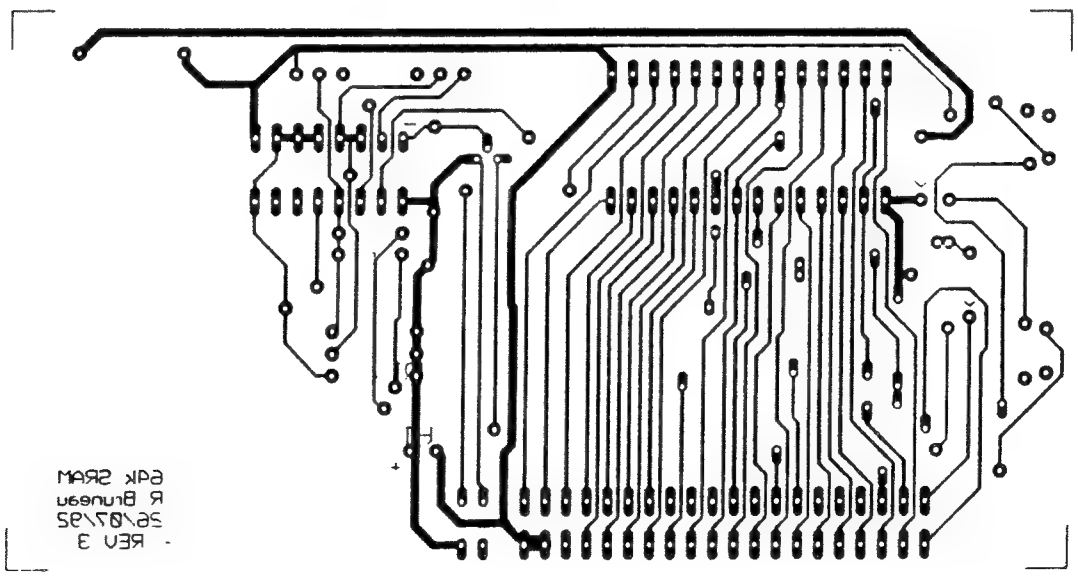
In the past, we have spoken about a product called TEC-200, a mylar sheet that allows you to transfer a photocopy of a printed circuit to copper for etching. One difficulty in using the mylar is in getting a good transfer to the copper all the time. A new product that has just been introduced promises to eliminate this. It is a specially treated paper that releases the photocopy when soaked in water. The transfer method is the same as with TEC-200. Spraying the photocopy with lacquer gives you a transparent decal for face plates, keytops, etc. For $9.95 (US) plus $4.00 UPS you get 5 sheets of the paper. Write to DynaArt Designs, 3535 Stillmeadow Lane, Lancaster, CA 93536. Ask for Item TTS-5.

64K SRAM - Component List

Item	Component	Comment
U1,U2	62256,43256	Static Ram
U3	74LS145	Decoder
Q1	2N2222	NPN Transistor
D1,2,3,4,5	1N4148	Signal Diode
R1,2,3,6,7,	2.2K	1/4 watt resistor
R4,8	4.7k	1/4 watt resistor
C1	10uF	Tantalum Capacitor
SW1,SW2	SPDT slide	
SW3	SPST toggle	
SW4	SPST toggle	Momentary on
B1	2 AA Battery	Holder



Component Layout (Not to Scale)



PCB Layout (Not to scale)

10/8/92

0 - 243
1 - 195
2 - 240
3 - 2
4 - 76
5 - 0
6 - 0
7 - 0
8 - 0
9 - 195
10 - 210

323½ N. Church Street
Bowling Green, OH 43402
July 19, 1992

Dear George,

Well, I haven't heard anything from Bob recently. I had been hoping to hear from him in regard to the changes to the machine language from the Larken version of the format program to read and write 9 sectors (like IBM disks). As I said in the letter which was published in the last Sinc-Link (the May issue), the corresponding changes (or what I think is corresponding) work for the Larken/AERCO format code, but I don't have any way to check the changes for a Larken I/F. I can't really continue with my 2068 to IBM programs until I know if it will work on your system as well.

12/3 page 512

Speaking of which, could you do an LKDOS PEEK of address 0004 in your cartridge and tell you what you see? On mine, I get a 41 hex, 65 decimal, which is the ASCII code for the letter A. I am hoping that is the identifier for the type of disk i/f, so that I could use it in a program to load the appropriate code. So if you get a 4C hex, 76 decimal, that may be what I am looking for.

A

On another matter, I think I will write another article on LKDOS user-defined commands. Last time I wrote about that, I didn't really supply much information in the article. (That was last year, when I supplied the new version of Grafix24.)

As for what I might do as a simple project to use in that article, I was thinking of an un-ERASE program or something similar so that I can demonstrate using strings. That is to say, I mentioned in the article that CALL 009C(hex) is a routine to evaluate a string parameter, but never gave any sort of example of how to use it. And of course there are lots of other routines I mentioned in the original listing back in 1989 that might deserve an explanation.

In fact, why don't I include the explanations with this letter first, and do the article next time. That in itself should be enough material for this month anyway. Presumably I will be getting the July issue in the mail soon - yes, in case you didn't know it, the newsletter always arrives here near the end of the given month. So you may be hearing from me again soon, if any articles in it need any comment. If not, I'll wait until I hear about the format changes and the version (?) or it is time to write the user-defined command article. Bye for now.

Sincerely,
Steven V Cunkorse

P.S. It is now July 31, and I still haven't seen the July issue!

P.P.S. I realized today (8/4) that I hadn't supplied sufficient details in the letter to Bob for you to actually try the changes — I gave the addresses but not the new values to test it with. Here are the changes to Hcode.C1 which should be made to read and write MS-DOS disks:

Address:	Current:	Change to:
9CE2 (40162)	0B	0A (10)
9CFB (40187)	14	12 (18)
9DD7 (40407)	0B	0A (10)
9EBE (40638)	14	12 (18)

The easiest way to do this is probably the following:

```
10 PRINT #4: LOAD "Hcode.C1"CODE
20 POKE 40162,10
30 POKE 40187,18
40 POKE 40407,10
50 POKE 40638,18
60 PRINT #4: SAVE "PCcode.C1"CODE 40000,2000
```

At this point, the thing to do is find two disks in MS-DOS format (preferably one of them formatted but blank) and the LKDOS FORMAT program. LOAD the FORMAT program into you 2068, then break into the program by pressing the cursor down (CAPS-6) key. Now type PRINT #4: LOAD "PCcode.C1" CODE (or whatever name you used to save it up above). At this point, you should just be able to type RUN, select "Copy entire Disk" (by pressing 2), and proceed to copy the disk with data to the blank disk.

If everything works as planned, the first thing you notice should be that there are no CRC errors during the copy. If you have set up the appropriate number of tracks, etc., you should now be able to take both disks to a PC and use them interchangeably. They should have the same files, the same directory, even the same serial number (if they were made with a version of DOS that uses a serial number). You should be able to TYPE any file on either disk, or run any program, or better yet simply DISKCOMP both disks. (a command to compare disks) If the DISKCOMP does not say "Compare OK", let me know.

That's it for now. Write you later.

LKDOS Machine Laguage CALLs Explained

Several years ago (see the Sept. '89 issue), I sent in a list of routines I had discovered by examining my LKDOS cartridge ROM (at that time, version A2). No real explanations were included, an unfortunate oversight on my part. Last year at about this time, I wrote a new version of Grafix24 and Autoboot, and included some additional details on a few of the routines I had listed earlier.

Below is a table of the routines mentioned in that article with explanations. While I am working from LKDOS for the AERCO disk i/f, most of these will be appropriate to any version of LKDOS. Any differences between different versions that I am aware of will be mentioned in the descriptions.

One addition to the memory map from that article. Location 200F hex (8207 decimal) is a sequential file open flag. It is 0 if there is no file open, 40h (64) if there is a file open for reading (by PRINT #4: OPEN #n,"filename IN"), and 80h (128) if there is a file open for writing. Code which intends to access the disk using LKDOS ROM routines should test this byte to see if they can safely access the disk.

Routines accessible without the cartridge enabled:

0062h	98	This address is used by ml to access the cartridge.
0064	100	This is one method to access LKDOS BASIC commands.
0066	102	the address used by any NMI.
006A	106	used by LKDOS channels except "dd". The calling channel is identified by the D register. Set D=0 to D=2 for LKDOS windows w0 to w2, D=3 for "lp", and D=4 or D=5 for file OUT and IN respectively.
006C	108	used by LKDOS channel "dd" (as in PRINT #4)
006E	110	LKDOS PEEK command. See LKDOS manual.

Other LKDOS routines:

0078h	120	write track. Copies data from 2070h-346Fh to current drive and track.
007B	123	read track. Copies data from current drive and track to 2070h-346Fh.
007E	126	seek track. Enables the current drive and steps to the track number stored at 201Dh (8221).
0081	129	next track. Step to the next numbered track on disk. Note: on AERCO cartridge, does not enable drive!
0084	132	Find name in directory. Expects name to be stored at 2022h. Generates error T if can't read track, sets 2020h (8224) to 0Ah (10) if name is not found in directory, otherwise sets 2031h to point to entry.
0087	135	Copy directory entry to 203Ah (8250). Presumes 2031h points to directory entry. (see previous routine and 00A2)
008A	138	Pop string and check as valid filename. Reads value from BASIC, copies it to 2022h, and checks for ".A", ".B", or ".C" in string. Error F otherwise.
008D	141	Find BASIC terminator. Adjusts machine language variable CH_ADD to point to the end of the current BASIC statement (: or ENTER).
0090	144	Evaluate unsigned integer. Reads value from BASIC, and converts it to an integer in the BC register. Standard errors if too big or not a number.
0093	147	Error message: T File Not Found. Displays error message and quits.

0096	150	Test Write Protect. Check to see if disk is write-protected. Notes: on A2, destroys data in 2070h-346Fh by reading track 0. On A3, moves drive to track 0 but does not read track.
0099	153	De-allocate file and find free tracks. Removes tracks from current directory entry (as copied to 203Ah by routine 0087 above) and adds list of free tracks at end of entry. Used for ERASE and before SAVE.
009C	156	Evaluate String. Evaluate BASIC value and copy it to 2022h (8226). Does not check it as a filename. Error if not a string.
009F	159	Call a routine in Home ROM. Expects two addresses, HL to contain address in 2068 ROM, DE corresponding address in Spectrum ROM. Tests CHANS to determine which address to use.
00A2	162	Add name to directory. Expects you to have used 0084h and not found name. Creates directory entry for name at 2022h, and sets 2031h to it. Error U if directory full.
00A5	165	Print number between 0-255. Always prints leading 0's. Expects number in A register at start.
00A8	168	Allocate tracks and update directory. Expects new directory entry at 203Ah with F5h for unused track and 2035h to point to end of track list, pointer to old directory entry in 2031h. If (2002h)=0, quits, otherwise returns.
00AB	171	Open stream as "dd". Expects stream number in 2030h (8240).
00AE	174	Print error message. Expects HL set to text of message. Quits when done.
00B1	177	Erase block header. Erase data from 2070h-2087h (the track header info for the current track). Used before setting up header for new track.
00B4	180	Set up block header. Set up track header info (2070h-2087h) based on LKDOS variables (201Dh=track, 2022h-202Fh=name&block start&block length, current line and VARS, and 2004h=total length).
00B7	183	Find a BASIC variable. Used by SAVE DATA to find an array. Expects appropriate single character in 2037h (8247). Use ASCII code for lowercase letter to find simple variable, ASCII code +32 to find numeric array, ASCII code –32 for simple string, ASCII code +96 to find string array. See 2068 User's guide, Appendix C.
00BA	186	Disable cartridge and turn off drive. Be careful whether to use this in ml or LD A,(0062h) if you don't need to turn off the drive.
00BD	189	CALL MAKE_ROOM in Home ROM. Used to call appropriate 2068 or Spectrum routine to make space for BASIC line or variable. See 2068 Technical Manual for more details.
00C0	192	CALL DELREC in Home ROM. Routine to delete BASIC line or variable. See 2068 technical manual for more details.
00C3	195	Error Message: X Cat Data Error. Prints message and quits.
00C6	198	First part of LOAD. Used by start-up and autoboot with 2002h set to 1. Acts differently depending on 2002h.
00C9	201	Second part of LOAD. Use this after 00C6h if 2002h is set to 0Bh.
00CC	204	First part of SAVE. Do not use with 2002h set to 1.
00CF	207	Second part of SAVE. Use this after 00CCh if 2002h is set to 0Bh.

MY VISIT TO NESQLUG

Hugh H . Howie.

Jessie and I have just completed a seven-day round trip through New York, New Hampshire and Vermont, making an extended stop in New Hampshire where NESQLUG held their August meeting at the home of noted Archive programmer Bill Cable, where we were entertained by Bill and Mary and their son Rigel, not forgetting the dog Tess and the cow Isadore.

Bill is not only a QL programmer, but is also an accomplished carpenter and cabinet maker, so much so that he is building his own home. This home is of most unusual construction in that it is round. The lower level wall is two feet thick and made of natural stone. The second floor is completely surrounded by glass, as also is the top floor, the whole is topped off by a glass roof with a large dome on top, giving an un-interupted view of the heavens.

The second floor will be the sleeping area, with a wide walk-around on the toutside. In the centre of this floor will be a large coffee table which will also be of glass, this table will cover a large opening in the floor which will allow the light of the sky to penetrate to the lower level.

It is intended that the floors be connected by a spiral staircase, and as this will be of an open concept design, in conjunction with the glass roof, will provide still more light down the lower floor.

The whole structure gives the impression of the traditional concept of the flying saucer.

Most of the wood is from his own little forest, and is cut and shaped as he requires. Work on the house being done as and when he has time from his work in the area, where he is in constant demand for his expertise in cabinet work

Electric power is from his own Solar System, backed up by deisel generator, which is also used to power all his wood-working equipment.

Enough of this chat and back to the meeting which was well attended by the NESQLUG members, most of home had journeyed two or three hours to attend. This group is a very strong and dedicated collection of both genders and all ages. All very knowledgeable and enthusiastic about the QL. Some members arrived on the Friday evening, and some on Saturday, with still more visitors on the Sunday which was the official day of the meeting.

We had demonstrations each day, and plenty of gab all the time, everyone had something to show and tell. Many questions asked, and all answered.

The demonstrations were of graphics, programmes, utilities, and there were also three QL's connected in a Network. The text87plus4 word processor was demonstrated and also the speed of the Gold Card. There were a few oohs and ahs at the speed of both.

It is a few days since the meeting and I am still remembering things which occurred and pieces of information I gleaned, there was such an inter-change of information it is difficult to recall it all at once.

The Club meeting was the same as any other club meeting where the status

of the club and its future are discussed, with vigorous input from most attendees.

Friday evening we went as a group to a local Thai resteraunt where we had a most interesting meal. Other meals were primarily of the barbeque style, and as we all contributed something there was an abundance of supply and variety.

The weather was not of the best to the dismay of most of us. Friday was a day of rain, and cool. Saturday a slight improvement, but still dull. Sunday was quite a bit better, but as this was the big day, with most members in attendance, most of us did not see outside too much - we were all too busy operating equipment. Despite the dull weather and the three QL's in operation, Bill's Solar Panel System stood up to the strain of supplying the power.

Having now met many of members of NESQLUG, I am able to put faces to names and voices with which I have been acquainted for some time by paper and phone.

It is just a few weeks since we had a visit form some members of NESQLUG, and it is gratifying to know that this type of gathering can be accomplished. There should be more of this.

I would like to thank Bill and Mary for the hospitality, and also to thank all members of NESQLUG for the welcome which we received. A most interesting and entertaining trip which I will remember for many years. I would like to be able to repeat this visit at a future date, but distance makes it difficult to make this visit too often.

050892

Q L I P S

by Hugh H. Howie

I cannot remember whether or not I have used this previously, If I have then I apologise, if not then it will be a gentle reminder of the winter just past, and of the winter still to come. After all it is only xxx days till Christmas which is how my kids kids count the passage of time. "My birthday is next week and then it'll soon be Christmas" Then back to all those little pieces of paper stuck to your mail, "Just a gentle reminder-----" or the one after that, "Pay up or -----"

Anyway this is a little scene with a frozen lake, the moon high in the sky reflected on the ice, mountains on the horizon, and a tree in the foreground. The title across the top is "Shivering in the Wind" Never the same twice in a row.

It is on the GRAF_1 disk of our QL Library, under the title of:_

TREE_BAS

```
50 REMark by A. Pritchard
60 REMark QL USER 1985
100 PAPER 5: PAPER #2,5 : WINDOW 512,256,0,0: MODE 8
110 INK 7: FILL 1 : CIRCLE 80,60,10 : FILL 0: INK
    #2,0
120 FOR i=1 TO 10: CIRCLE 80,2,i,.1,PI/2:NEXT i
130 FOR h=25 TO 12 STEP -1: d :NEXT h: INK 0: FILL 1
140 LINE 0,-3 TO 28,40 TO 36,40: ARC TO 50,-3,PI/2
150 FILL 0: tr 28,40,20,8: INK 3: AT 0,5: OVER 1
160 CSIZE 3,1: PRINT '"Shivering in the wind"';
170 CSIZE 2,0: PRINT "AP85";
180 DEFine PROCedure tr (x,y,l,b):LOCal i,f,g,bl
190 IF l<2 THEN RETurn
200 FOR i=1 TO 4
210 bl=b/2: IF b/2>1 THEN FILL 1
220 f=x+(i*l-1.2*l-RND(1))*1.2:g=y+RND(l*2.3)-1/3
230 k=0: IF i=4 AND l=20 THEN k=3
240 LINE x,y TO f,g TO f+bl-1,g
250 LINE TO x+b-1,y-k TO x,y
260 FILL 0: tr f,g,l/2,b/2:NEXT i: END DEFine
270 DEFine  PROCedure d : p=RND(150)-30:g=RND(160)
280 INK 3: FILL 1: LINE p,10 TO (p+g)/2,h TO g,10
290 FILL 0: INK 7: LINE (p+g)/2,h TO g,10:INK 3,5
300 FILL 1: LINE p,10 TO (p+g)/2,10-(h-10)/3 TO g,10
310 FILL 0:END DEFine
400 PAUSE
```

(022092)

DISKS, CASSETTES, MODEMS, OLDER HOME COMPUTERS
Some New Tips, Problems
by Bill Harmer

Floppy disks used to be fairly expensive and both the disks and the disk drives employed with older computers in their heyday often were of poor quality, causing many unexpected problems for users. A lot of these older clunkier drives are still around, many original ones and many bought by hardware tinkerers to add to their computers.

The older drives may not like to write to the innermost tracks for example. Or they may spoil disks easily during normal operation; or be out of alignment and make saves to disks that a drive with a normally aligned head can't read. Result, you cannot swap disks with them.

Similar alignment incompatabilities may plague cassette use. Some of the older computers that use cassettes have the peculiarity of needing a fresh cassette to store programs on (rather than a merely erased cassette).

So using one of these older computers may be a problem unless you are a born tinkerer. A more expensive solution is to fix it by simply replacing the disk drive or cassette unit by a brand new one. You may have to ask around a user group to find someone to do it, or to source a suitable unit in the case of some makes and models.

These problems will be something that older users will be familiar with so that we will not dicuss these points here. The problems often have been covered in old user group newsletters and old magazines for the make of computer you have.

However new problems are arising. Some disks that are being sold now work perfectly alright with the newer computers but not with the older ones. It seems that the operating systems of newer computers are often better able to cope with small imperfections on the disks. For example, if a disk has a fault on the track that the directory is located on, this may not bother a computer that uses an operating system that puts two directories or file tables (FATS) on the disk, so even if one directory is impaired by a bad magnetic fault, the other which is a duplicate copy will be alright.

If the operating system on your computer only looks at one of the copies of the directory track info, or only writes info to one of them anyway, then you may have a problem with a cheaper floppy disk that a newer computer may not notice at all. This would seem to be the case with some disks used even in IBM-compatable computers running in MS DOS versions earlier than 2 compared to those running versions numbered 2 or higher.

Any computer of an older vintage that uses track 0 for its directory info may have the same problem since the older operating systems rarely made duplicate copies of the directory information on each floppy disk. But the computers, or operating systems used by some computers, that put the directory tables on other tracks (track 18 for Commodore 64, track 17 for Radio Shack Color Computer BASIC O/S disks) may encounter this problem if the flaw turns up on their directory track. So if you take the disks back to the store and the sales or service personnel cannot find any problem when they use the disks in their computers that does not prove that there is something wrong with your computer or that nothing is wrong with the disks.

For my own use of older computers, sticking with brands of known quality like BASF has become my current practice. The bad disks will probably run on an IBM PC clone with MS DOS version 2 or higher so you can save them for that use.

Something similar seems to affect modem use with older modems that run at slower speeds. Some areas have telephone systems so poor that a lot of errors get into transmissions. Newer software can often handle this and since moderm modems run at much faster speeds, the software has time to let the modem program writers add extra routines to re-transmit blocks, etc. Older software used with older computers may not have this. But running a faster modem, with software that cannot cope with errors of a noisy line may just make the problem worse, since higher speeds are harder to run on bad lines.

Using a better quality modem may help. Some hardware hackers have tried filters with mixed success. Some amateurs may also have forgottrn that acoustic coupled modems are not good for long transmissions with phones that use the old carbon microphones. Newer units that use electret mics inside may fix that problem. This all means that user groups are still needed to swap tips and fixes on these older, classic, home computers.

slightly edited by GFC

****

Lightweight materials bring cycling to softies

THE eclectic inventor Clive Sinclair last week unveiled his latest creation: an electric bicycle called the Zike. As light as a racing bike and with a top motoring speed of 19 kilometres per hour (12 miles per hour), Sinclair hopes it will appeal to those who find pedalling too energetic.

Sinclair's inventions almost always break new ground but have had varied commercial success. He produced some of the earliest electronic watches, pocket calculators, personal computers and flat-screen TVs. But his most recent previous brainchild, an electric tricycle called the C5, resoundly flopped when launched in 1985.

Lightness is the key to Sinclair's bike. Legislation passed in Britain in 1983 lets anyone over 14 ride electric bicycles without a licence, tax or insurance, as long as its speed is limited to 15 miles per hour (24 km/h). Sinclair says that his company, among others, investigated making an electric cycle at the time but the technology did not exist to make it light enough.

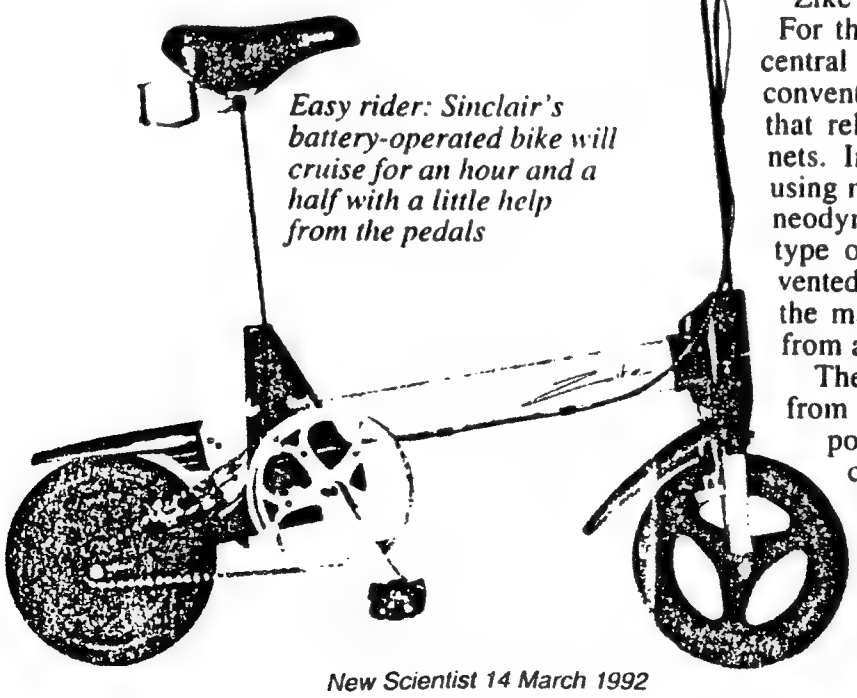
More recently, Sinclair says, improvements in nickel-cadmium batteries, the type used in portable phones and laptop computers, has made them cheaper and lighter. The Zike has a nickel-cadmium battery inside its central bar which is half the weight of its equivalent lead-acid battery. Recharging with a separate unit takes one hour, rather than the usual eight, and can be done 2000 times.

The battery is connected to the motor through an electronic controller. This feeds to the motor whatever voltage is necessary for the conditions and is sufficiently wide ranging that the Zike needs no gears.

For the motor, also enclosed in the central bar, Sinclair dispensed with conventional compact electric motors that rely on ferrite permanent magnets. Instead he opted for a motor using magnets made from an alloy of neodymium, iron and boron. This type of permanent magnet was invented in Japan in 1983. This reduces the magnet's weight to 850 grams, from a typical 3 kilograms.

The frame of the bike is made from aluminium alloy and a composite of glass fibre and nylon called Verton developed by ICI. The result is as light as a typical racing bike at 11 kilograms. Sinclair hopes to have it on sale in May at a cost of £499.

Daniel Clery



Easy rider: Sinclair's battery-operated bike will cruise for an hour and a half with a little help from the pedals

New Scientist 14 March 1992

ZX-91

NO. 5

10 YEARS LATER

ALL :

THE NEW NEWSLETTER FOR THE SINCLAIR ZX81 / TIMEX 1000.

ALL YOU SEE, AND WILL SEE, HAS BEEN CREATED WITH, AND ONLY, A ZX81, A 16K RAMPACK AND A TIMEX 2040 PRINTER.

VACATIONS!

Time to play! Time to play with your ZX! In this ZX-91 #5: Big news from Holland, more new friends of ZX-91, a new dealer found, more changes to ZX-91, a longer print-out, a graphic blow to Nintendo and Sega, a longer list of SUPPORTERS, an invitation to the COMPUTERFEST to be held in Dayton, Ohio. ZX-91 spreads it all to all Sinclair/Timex users.

IF YOU WISH TO RECEIVE A PRINT-OUT, A CASSETTE, AN INFORMATION, A REPLY OR THE NEXT MONTH ISSUE OF THIS NEWSLETTER SEND A SELF-ADDRESSED ENVELOPE TO:

ANDRÉ BAUNE
304 SCOTT
CHATEAUGUAY, QUÉBEC
CANADA J6J 4H5

KNEE-USE-N-N-SIRS

The above title reads: NEWS AND ANSWERS.

B I G N E W S:

Yes! There is an emulator program for the IBM PC to run ZX81/Timex 1000 software! Thanks to Mort Binstock of Pittsburg who had sent me the news which appeared first in ZX-91 #4. But better than that, there is also an emulator for the QL to run the ZX81/Timex 1000 software. There is also an emulator for the QL to run the Spectrum software.

These programs are distributed as shareware for about 25$. Your ZX must have 64K and run under QZDOS. Contact your listed Sinclair/Timex group for more details or write to:

Carlo Delhez,
Emmastraat 3,
4651 BV steenbergen
Netherlands

M O R E:

The Q Z X newsletter of March reports the existence of an emulator program for the PC to run Spectrum software.

E V E N M O R E:

I heard of an emulator for the Atari ST to run ZX81/Timex 1000 software. Hey! Seems to me that the big guys are looking at us for brainware!

B A D N E W S:

Computer Monthly has moved to big computers only, droping our regular T/S NEWS column. If you haven't written to them yet, do it now! Tell them: Reading our column was the only reason to buy their magazine. The more will write, the more they will listen! Let's do it!

T H E G A Z E T T E:

The Montreal #1 English daily newspaper has put out two stories about the ZX81/Timex 1000. Thanks to Cairn McGregor and THE GAZETTE, I have been able to reach more users of the ZX81/Timex 1000 in my area.

—→

N E W F R I E N D S:

I have received a newsletter from C.A.T.S., the Capitol Area Timex/Sinclair Users Group. And also the newsletter from the Dayton Microcomputer Association Inc. See their addresses in the SUPPORTERS' list. Remember along with ZX-91 all the groups and dealers listed in the SUPPORTERS' list are getting known.

B E L I E V E I T O R N O T:

I have found a dealer of hardware and software for the ZX81/Timex 1000 (and the QL) in Quebec city. See him in the SUPPORTERS' list.

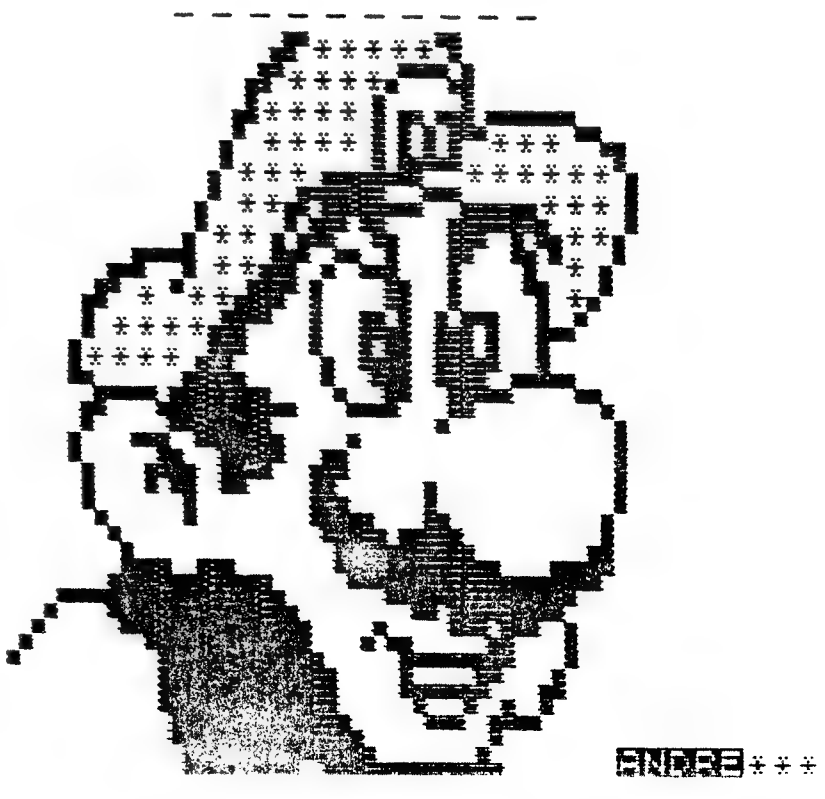
W H O ' S W H O ?

I am exchanging newsletters with many different users groups. With some groups I send my newsletter to the editor, some to the president, some to the secretary etc... My question is WHO should I send it to? I do not want to create a jurisdiction problem among the different leaders of one club. So please advise.

N E W U S E R:

The users of the ZX81/Timex 1000 are increasing. I even received a letter from a beginner who would like to start with a ZX in a kit format. That's a beginner! You know where to get one? Let me know.

—→



R E C T I F I C A T I O N:

ZX-91 is (almost) a monthly newsletter. This statement is more realistic. If the numbers of subscribers had leveled off at about 50 as forcasted, I would proberly have been able to keep a monthly output. But the mailing alone and the answering to the new users is taking much more time than I have.

N E W S L E T T E R S E X C H A N G E:

ZX-91 is exchanging newsletters with N.O.C.C.C., the North Orange County Computer Club. It is not a Sinclair-Timex group. But if you happen to have an IBM related computer (like me) or a McIntosh, you can contact them at:

N.O.C.C.C.
BOX 3616
Orange, CA 92665

It is a very dynamic and serious group.

T H A N K Y O U:

To Aurele Boivert of Pickering Ontario who sent me the info sought by Ike Walker of Boynton Beach, Florida who wanted to connect his ZX to an Olivetti printer. Aurele mentions also that he has some ZX81 equipped with 64K and 32K and some 16K rampacks to sell. Interested? Contact ZX-91, it works!

T H A N K Y O U:

To David G. Leech of BYTE-BACK who sent me his latest catalog (get yours!) in which Ike (Walker) could find what he needs to connect his printer. All this info will be sent to Ike.

T H A N K Y O U:

To New England's Sinclair QL Users Group and to Peter Hale of EMSoft who sent me a copy of the letter describing the emulators programs from Holland.

EMSoft advertizes mostly for the QL but still has software and materiel for the ZX81/Timex 1000. Send for his catalog.

The New England's Sinclair QL Users Group can be reach at this address:

New England's Sinclair QL Users Group
BOX 8763
Boston, MA 02114

—→

SINC-LINK

ZX-91

DAYTON COMPUTERFEST

Yes! There will be a ComputerFest at the Hara Arena, 1001 Shiloh Spring Rd., Dayton, Ohio. On the 29th and 30th of August. Many Sinclair-timex users and users' groups will be there. For more info write or phone:

Gary M. Granger,
812 Hedwick St.
New Carlisle, OH 45344-2619
(513)849-1483

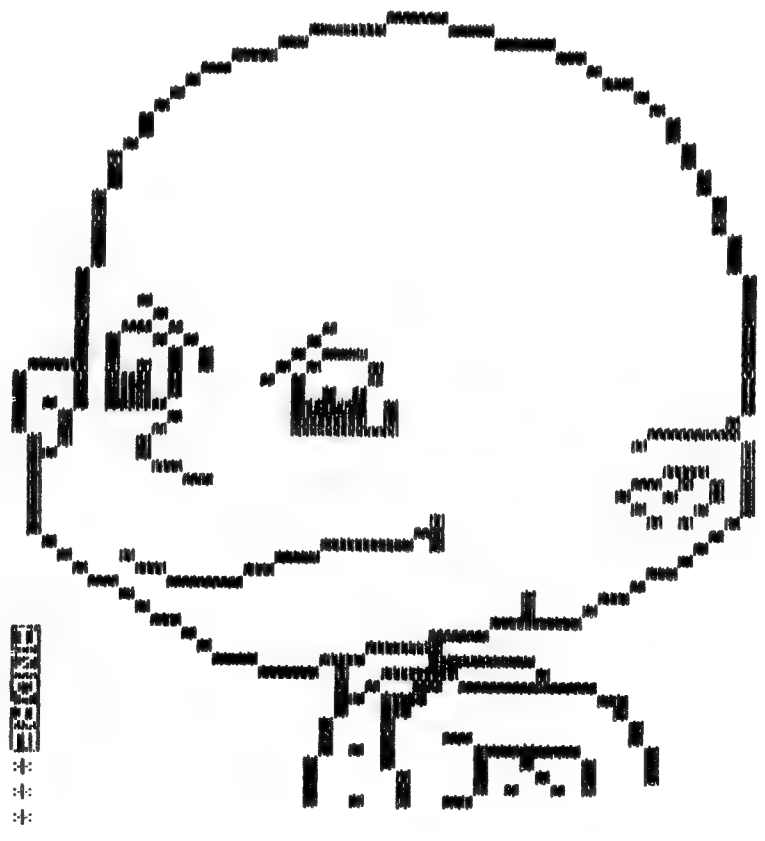
LAST MINUTE INPUT:

I just received a letter from Curt Carlson of the Mile High Timex/Sinclair Users Group. See them in the SUPPRTERS' list.

You have a great or a simple news about the ZX81/Timex 1000? Send it in! ZX-91 will spread it!

ANDRE***

- - - - - - - - - - -



Send me the name of the character(s) depicted in these pages and I will send to you F R E E the program and the data to make them on your own screen or printer. See also bottom of page 1.

AWARI

I this issue of ZX-91 I am giving you a longer print-out. I have been claming that I have created many programs and that I am (very) good at it. So here is a good exemple of a well constructed program for your ZX81/Timex 1000. You will notice the rapidity of execution and the fast decision from the computer to make its move.

RULES OF THE GAME:

The leftest and rightest boxes are the score boxes only. The A to F boxes belong to the computer. The G to L are yours. You (or the ZX) take the points from one of your boxes and distribute them one at a time in the adjacent boxes in a clockwise motion. If the last point is droped in an empty box (whether it is in yours or your opponent), the points in the opposed (across) box will go to the score box.

The game ends when one of the player gets more than 18 points or when a player has no more points to distribute (as in the sample screen). Then the player with the highest score wins. The ZX plays first. Study his moves. Beware it plays well but it can be beaten.

TYPING NOTES:

Line 680 = graphic E, graphic 7, graphic 7, graphic R.

Line 710 = graphic 5, 3, space, graphic 8.

Line 740 = graphic W, graphic 6, graphic 6, graphic 0.

- - - - - - - - - - -

```
  1 REM AWARI 82/07 ANDRE***
  9 REM
          **YOU**

 10 PRINT AT 14,0;"YOUR MOVE, W
HICH BOX?  "
 20 LET Z$=INKEY$
 30 IF Z$<"G" OR Z$>"L" THEN GO
TO 20
 40 PRINT AT 14,22;Z$
 50 LET D=CODE Z$-37
 60 IF NOT B(D) THEN GOTO 10
 70 GOTO 250
```

—→

```
 99 REM
            **ZX-81**

 100 LET F=0
 110 LET S=F
 120 FOR D=1 TO 6
 130 IF NOT B(D) THEN GOTO 180
 140 LET A=D+B(D)
 150 IF A>12 THEN LET A=A-12
 160 IF NOT S THEN IF NOT B(13-D
) THEN LET S=D
 170 IF NOT B(A) THEN IF B(13-A)
THEN IF 13-A<>D THEN LET F=D
 180 NEXT D
 190 LET D=S
 200 IF F THEN LET D=F
 210 IF D THEN GOTO 240
 220 LET D=INT ((RND(.7)*3+RND*3
+1)
 230 IF NOT B(D) THEN GOTO 220
 240 PRINT AT 14,0;"I WILL PLAY
BOX ";CHR$ (37+D)
 249 REM
            **ADDING**

 250 LET A=D+B(D)
 260 FOR I=D+1 TO A
 270 IF I<13 THEN LET B(I)=B(I)+
1
 280 IF I>12 THEN LET B(I-12)=B(
I-12)+1
 290 NEXT I
 300 IF A>12 THEN LET A=A-12
 310 LET B(D)=0
 320 IF B(A)<>1 THEN GOTO 360
 330 IF D<7 THEN LET P(2)=P(2)+B
(13-A)
 340 IF D>6 THEN LET P(1)=P(1)+B
(13-A)
 350 LET B(13-A)=0
 359 REM
            **PRINTING**

 360 FOR I=1 TO 6
 370 PRINT AT 6,I*4+1;B(I);" " A
ND B(I)<10;AT 10,I*4+1;B(13-I);"
" AND B(13-I)<10
 380 NEXT I
 390 PRINT AT 8,1;P(1);TAB 29;P(
2);AT 14,0;E$
 400 LET E=P(1)>18 OR P(2)>18 OR
 NOT (B(1)+B(2)+B(3)+B(4)+B(5)+B
(6)) OR NOT (B(7)+B(8)+B(9)+B(10
)+B(11)+B(12))
 410 RETURN
 445 SAVE "AWARI"
 450 GOSUB 600
```

-->

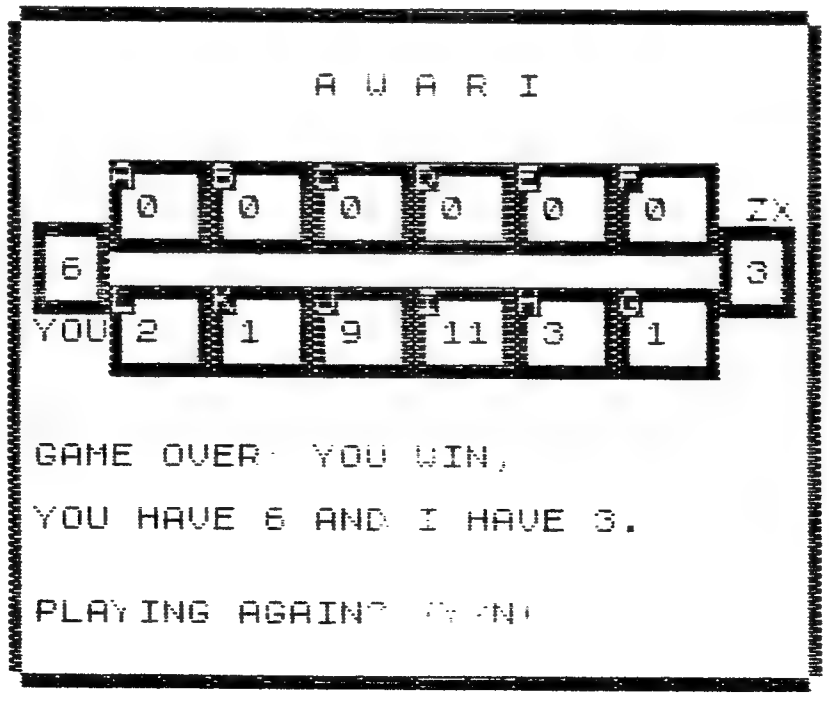

```
 459 REM
            **THE GAME**

 460 GOSUB 100
 470 IF E THEN GOTO 500
 480 GOSUB 10
 490 IF NOT E THEN GOTO 460
 499 REM
            **THE END**

 500 PRINT AT 14,0,"GAME OVER: "
;
 510 IF P(1)>P(2) THEN PRINT "YO
U WIN,"
 520 IF P(2)>P(1) THEN PRINT "I
WIN,"
 530 IF P(1)=P(2) THEN PRINT "IT
 IS A DRAW,"
 540 PRINT AT 16,0;"YOU HAVE ";P
(1);" AND I HAVE ";P(2);"."
 550 PRINT AT 19,0;"PLAYING AGAI
N? (Y/N)"
 560 IF INKEY$="Y" THEN RUN 450
 570 IF INKEY$<>"N" THEN GOTO 56
0
 580 CLS
 590 STOP
 599 REM
            **PREP**

 600 CLS
 610 PRINT ,TAB 11;"A W A R I"
 620 DIM B(12)
 630 DIM P(2)
 640 DIM E$(32)
 650 FOR I=1 TO 12
 660 LET B(I)=3
```

-->



SCREEN SAMPLE


```
 670 NEXT I
 680 LET Z$="▐▀▀▀▌"
 690 LET E=5
 700 GOSUB 800
 710 LET Z$="▌3 ▐"
 720 LET E=6
 730 GOSUB 800
 740 LET Z$="▐▄▄▄▌"
 750 LET E=7
 760 GOSUB 800
 770 RETURN
 799 REM
            **SCREEN**

 800 FOR I=1 TO 6
 810 PRINT AT E,I*4;Z$;AT E+4,I*
4;Z$
 820 IF E=7 THEN PRINT AT 5,I*4;
CHR$ (I+165);AT 9,I*4;CHR$ (176-
I)
 830 NEXT I
 840 PRINT AT E+2,0;Z$;TAB 28;Z$
 850 IF E=6 THEN PRINT AT 6,29;"
ZX";AT 8,1;"0";TAB 29;"0";AT 10,
0;"YOU"
 860 RETURN
```

PRINT-OUT

Why print-out in ZX-91? Because the ZX81/Timex 1000 is the #1 computer to learn about computing and typing yourself a program is a sure pleasure and a good way to learn the skill of programming.

The ZX is THE computer for the beginner, the learner and the experimenter because it is a low cost computer and it is easy to learn with. And typing in programs from print-out is an excellent way of learning and improving your own skill. ZX-91 will continue to offer you the best and the newest programs.

NEXT ISSUE

Two famous cats that you could see on your screen. A reprint from The Gazette (Montreal #1 daily newspaper) about our computer. More news about emulator programs. More print-out. Until then support our SUPPORTERS and try to beat your ZX at AWARI.

ANDRE***

SINCLAIR/TIMEX' SUPPORTERS

U S E R S G R O U P S

C A T S
Capital Area Timex Sinclair Users Group
BOX 11017
Takoma Park, MD 20913

C A T J G
Chicago Area Timex Users Group
c/o Al Feng
15 Wake Robin Ct.
Woodridge, IL 60517-1751

C C A T S
Clackamas C'puter Applied Training Society
1419 1/2 7th St.
Oregon City, OR 97045

D M A
Dayton Microcomputer Association Inc.
BOX 4005
Dayton, OH 45401-4005

I S T U G
Indiana Sinclair Timex Users Group
c/o Frank and Carol Davis
513 E. Main St.
Peru, IN 46970

L I S T U G
Long Island Sinclair Timex Users Group
c/o Harvey Rait
5 Peri Ln.
Valley Stream, NY 11581

M H T S U G
Mile High Timex/Sinclair Users Group
c/o Curt Carlson
601 S. Grant St.
Denver, CO 80209

S E A T U G
SEatle Area Timex Users Group
c/o Malcolm Post
3323 Frater Ave. S.W.
Seatle, WA 98116-3112

S L I X
SincLair Information eXchange
c/o William W. Miller
6675 Clifford Dr.
Cupertino, CA 95014-4530

T / S N U G
Timex Sinclair NorthAmerican Users Groups
c/o Donald S. Lambert
1301 Kiblinger Pl.
Auburn, IN 46706

—→

T S C U G
The Greater Cleveland Users Group
615 School Ave.
Cuyahoga, OH 44221

T T S U G
Toronto Timex Sinclair Users Group
14 Richome Court
Scarborough, Ontario
  CANADA M1K 2Y1

V I S T A
Vashon Island Sinclair Timex Association
BOX 199
Vashon, WA 98070

ZX Users Group of New York
BOX 560 Wall St.
New York, NY 10005

MAGAZINES AND NEWSLETTERS

Computer Monthly
BOX 55886
Birmingham, AL 35255

FDD Newsletter
1274 49 St. #821
Brooklyn, NY 11219-3091

Free Software Foundation
675 Massachusetts Ave.
Cambridge, MA 02139

Update Magazine
BOX 1095
Peru, IN 46970

0 Z X
2025 O'Donnell Dr.
Las Cruces, NM 88001

D E A L E R S

Byte-Back Inc.
BOX 112, 536 Long Terrace
Leesville, SC 29070

Computer Classics REPAIR
RT 1, BOX 117
Cabool, MO 65689

EMSoft
BOX 8763
Boston, MA 02114-8763

Yves Gagnon
4000 boul. Central
Dubergier, Quebec
  Canada G1P 3P9

—→

John McMichael
1710 Palmer Dr.
Laramie, WY 82070

Mechanical Affinity
513 E. Main St.
Peru, IN 46970

Mountainer Software
749 Hill St. #9
Parkersburg, WV 26104

The John Oliger Co.
11601 Whidbey Dr.
Cumberland, IN 46229

RMG Entreprises (4$ catalog)
1419 1/2 7th St.
Oregon City, OR 97045

Sunset Electronics
2254 Taraval St.
San Francisco, CA 94116

To receive information from the people listed above please send them a self-addressed and stamped envelope (SASE). If you want a catalog, add a dollar (1$) to your letter.

As more clubs, dealers, newsletters and magazines will contact the ZX-91 newsletter, I will include them in this SUPPORTERS' list.

It is a free service to them and a great source of information to the readers.

ANDRE***

--ACHTUNG--

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The picture on page 3 is a trademark of Nintendo and the picture on page 5 is a trademark of Sega.

The word processor used in these pages is ''WORD SINC II'' of P. Hargrave. Nanaimo, B.C. Canada.

—→

TRANSFERRING Z-88 FILES TO THE 2068

by John J. Shepard

I got my Z-88 so I could have a truly portable computer. Not a 2068 or a 1000 in a suitcase, but a real notebook, at a price that was affordable. I wanted a Sinclair product on which I could continue my efforts while on the road on my job. maybe use it as an enhancement to my job. (That has worked out). So, I appealed to the Timex community through N/L. I used my local (HA! I'm in Iowa, local is Chicago) UG - CATUG & it's N/L 'NITE TIMES NEWS' and T/SNUG's N/L 'SIR CLIVE'. I was answered with not one, but five offers, and one was within my price range and worked. This was how I met Dave Bennet (more on him, later), but he told me of the seller who was selling it for a friend and even with this kind of third party relationship she took my personal check, packaged it up with bubble wrap, PC Link, a power supply, and fresh batteries. Isn't this a great group we're in??! Now with batteries in their slot, a rechargable set from Lee at Macro Systems, Salt Lake City, Utah and the Realistic Power supply my memory is almost non-volatile.

My only problem was how to archive my files. I don't have a PC, Mac, or QL so the Link SW is out, nor did I want to support them anyway. I couldn't afford the $450 disk drive that is offered by Domino Cubes. What I wanted to do was typically something no one seemed to be doing - using what I had - a 2068. There seemed to be no easy road. There is not an Import-Export pgm avail. for the 2068 nor is there a serial hardware/software pkg readily available. Oh sure, if you've got a Z I/O IF or a 2050 PCB - you can hack one out, - so you might have the hdw, but the SW?????

So, when Frank Davis and then Dave Bennet mentioned a null modem, they really had my interest. Especially, since this type of transfer could help me get around the need for a serial to parallel converter needed to print straight from the Z-88. They are expensive, about $100, this may not be much to you, but with 5 children and a middle income, you have an idea of my budget constraints. It also makes me mad when someone asks so much for something that is so simple. Back to the null modem, where if I understand it correctly, you cross the Recieve and Transmit wires and use a modem pgm. without a modem. Probably, not real accurate but as close as any user who's out in the sticks without a UG to go across the street and compare notes.

So, as I was searching, Dave Bennet, came to my rescue and suggested I could somehow use Z-88COM (a Z-88 modem pgm.) and a BBS on the 2068. Here I must tell you that without Dave Bennet I would be using my Z-88 for a doorstop, not my Z-81. Dave bent over backwards trying to help this ignoramus deal with his failings. Dave's first contact with me & my 88 was to send me a PC disk full of 88 pgms and utilities that could be had as soon as I discovered the diff. between a 286 and 386 based PC. Talk about incompatibility, Timex/Sinclair machines have got nothing on IBM, right HAL? (But no matter how much you love our machines, let me tell you if you're to get along in the outside world you had better get PC smart. Sort of like, if you're in a foreign country, the ability to read, write and speak their language puts you on much firmer footing than if you're working through an interperter). I have called Dave time and time again, written many stupid questions and even borrowed equipment, me a perfect stranger, but a fellow Sinclairest in trouble. The same can be said of Bob Swoger who has listened many times to my whinnings, much to the dismay of his lovely wife, Annette, but there has been light at the end of the tunnel. Not as bright as I would like, but close.

I can transfer files. I can archive them on disk with my LKDOS 2068. But, if my Z-88 crashes it's modem program I haven't figured how to get it back from the 2068, with no readily, recognizable or operable transfer pgm., method, SW. So, untill I can, I'll use an EPROM cartridge to store the modem SW. The only source, for the EPROM I found, is Domino Cubes, (212-971-0368) % Mike Fink.

The phone line connection is not a straight wire. I could not get the Hayes compatible modem for the Z-88 to call without a dial

tone to start it off. Or, the same for the 2050, I could have done as John Bell suggested in TDM 5.1 (Boy, was 5.1 hard to come by, Huh?). He says, by soldering a push button Normally Open switch across pins 4 & 7 of the 74C00 IC, you can simulate an incoming call. Now, I'm not above a little hardware hacking, but my 2068 has enough loose wires connected to it, So, if I can bypass hacking, I will. Therefore, the following method:-

Take a phone line from the Hayes and one from the 2050 and plug them both into one of those phone jack modules that lets you plug two into one. Then, you have to get house hold security to break the fingers of any teenager or otherwise who dares to pick up any other phone during your transfer. Next we'll set up the Z-88. When it's on, set the parameters first, (no adjustment later, as you can with MTERM)on the Panel ([] S) to 300 BAUD - RECIEVE & TRANSMIT, Parity - NONE, XON/XOFF - No. (It then matches your 2050). That "[]", (left and right bracket) is to symbolize the square symbol on the Z-88 keyboard where [] S will get you to the Z-88 Panel. With your parameters set, LOAD Z-88COM.BAS into BASIC and RUN, after the M/C is LOADed, the menu will come up.

!On the LKDOS 2068 LOAD MAXCOM and set it up to AUTO ANSWER as a BBS as pointed out in the Manual, Bob Swoger or I can help, (sorry, Bob) if you have any questions,

Once it'set, go to the Z88COM menu and press G, this will take you to the V-52 terminal where you can access the Hayes modem with an ATDTXXX-XXXX where the X's are your phone number, the ATD tells the modem you want to dial a number and the second T says it will be a tone rather than a pulse. Some of you may find this all rudimentary, but I had no idea that these Hayes Commands were a standard, maybe someone else won't know either.

Anyway, when you dial your own number you will, of course, get a busy signal, (but you will have also entered the 2050's 74C00 IC), after the busy sig press ENTER on your Z-88, when the terminal resonds and waits, type ATA - ENTER. This will send a modem carrier. If you have done it quick enough, (during the time the 2050 sends it's carrier before it times out), you'll get a connect. When you do, ENTER the BBS staying with the Z-88 keyboard as the caller. When the Command Menu pauses at the prompt, choose Upload a pgm with a U. It will ask you for the file's name with an LKDOS extension, ie., X.CT where X can be the name of your Z-88 file or any name you want to call it. Then it will ask if you want Headers - say Yes with a Y and will go to Recieve. Now get out of the V-52 Terminal by keying [] B for Basic to get to the Z88COM menu where you'll press S to SEND a file, the SEND menu asks for the name of the file you have in the RAM, pre-selected by the Panel parameters, that you wish to SEND, the pgm will tell how many blocks are to be sent and you're off. (The number of blocks will, with experience, tell you how long the transfer will take - at 300 BAUD about 4.5 secs per block). Using XMODEM there can be no glitches to corrupt your transfer. A good block transfer is indicated by a "+" appearing on your monitor, while a glitch (usually caused by any extraneous noise on the line) is indicated by a "-". If a block transfer has been corrupted by some problem, XMODEM will reattempt the transfer till it's good. If you get a string of "-" then maybe you should break the connect and clean up your signal. You can hear this either with the speaker on your modem or over a phone. Usually a wiggle of a connector will clean up the signal. While I've used this method, since you have a "captive, dedicated" phone line (except for teenagers" it has gone error free. When the file is transferred, MAXCOM will SAVE it, on disk selected by it's menu, to the file you named, then say BYE at the prompt and you're home free.

Or as Bob Swoger says,
ENJOY!

TIMEXERS CAN SURVIVE WITH HELP

SUPERBASIC RAMBLINGS

Many thanks to few people who eventually got around to writing to me. Your encouragement and a couple of 'ah yes buts...' are appreciated.
It's encouraging to know a tiny percentage of fellow members are (is?) not suffering from terminal apathy.....
Also appreciated were the suggestions for alternative Friday night activities but as these had nothing to do with the QL I won't repeat them here.....

The 'ah yes buts:-'

1. Inkey$ won't work if another job closes the channel. If you need this article then you probably don't multitask yet anyway, but bear it in mind. I didn't think this had any relevance in an article for beginners.
2. A timed PAUSE will end prematurely if you press a key. I forgot to mention this. Thanks Phil, for reminding me. It's a useful feature in my view.

THE LAST on INSTR:

We have seen how INSTR detects the presence of one string inside another. It does a little more than this. As dear old QL runs along the larger string looking for the smaller he counts characters as he goes, so, if he finds the string, he knows exactly where the smaller string is. For example:-

PRINT "PYW" INSTR "ALAN PYWELL" would print "6" because the P of PYW is the 6th character in my name. The trouble with QL is that he is extremely forgetful at times. No sooner has he printed "6" than he forgets all about it. If you ask him again he would have to work it all out again. The remedy is to tell QL to reserve some memory and store the answer there. He'll forget what he stored but he won't forget where he stored it, so he will always know where to look for the answer. To help we give the storage location a name, but we do not refer to it as a storage location, because we don't care where it is, we care only for what's stored there. So we call it a variable'
LOCATION = "PYW" INSTR "ALAN PYWELL". Location has the value of 6. It is possible for LOCATION to have a value of zero.
LOCATION = "PYW" INSTR "PHIL BORMAN" Location is set to zero because, surprise, surprise, QL can't find "PYW"! LOCATION is, as you've gathered by now, a variable. Sometimes it is not necessary to use a variable. - we don't always need QL to remember long-term whether a substring is in a larger string, or where it is if it's there. A case in point is the example we saw in a previous article, where we wanted to detect whether an allowed key had been pressed. Once QL has decided, he can safely forget all about it, so there is no need to assign the result of INSTR to a variable.

More on passing parameters.

You can call a procedure and pass to it say, two parameters, say C and D. Inside the proc you could have two variables say, A and B. Initially the values of C and D will be assigned to A and B inside the proc, but A and B may then alter, depending on what the proc does to them, but on leaving the proc these new values are assigned to C and D while A and B revert to the original values of C and D!. If you think that's confusing read the Jan Jones' over-rated book!
To put it another way, the parameters in a line that calls a procedure get altered by the procedure, but the variables inside the procedure end up with the values that were sent to them. An example just might clear the mind.

```
DEFPROC ADD_10 (A,B)
A=A+10:B=B+10
PRINT "A=";"B=";"C=;,"D=";D
ENDDEF
```
NOW CALL **ADD_10:**

```
C=20
D=30
ADD_10(C,D)
```

and what you find is that the calling parameters C and D have been incremented by 10 but that A and B (which the proc appeared to muck about with) have their original values. This may seem rather strange at first glance but think about it - when you called the procedure it was C and D that you wanted to be incremented so be happy! Incidentally. the library at Ilkeston, Derbyshire has a copy of the above-mentioned book.

SuperBASIC FUNCTIONS

Define a function with the shorthand DEFFN (QL knows you mean DEFINE FUNCTION)
Call a function with its parameter(s) in brackets.
A function can be part of an expression; it is then treated as if it were an expression enclosed in brackets i.e. it has a high precedence (see later for precedence).
A function also needs to be told to return a result.

A trivial example:-

```
DEF FN CHANCE (X)
A=RND (1 TO X)
RETURN A
ENDDEF
```

If you have a line
LET F=CHANCE(100)
then F will take a random value between 1 and 100.
You could have a line like
F=(A+B)*(2*CHANCE(G)) + (F>1)
See page 88 of the Beginners guide. Shows how a function can be passed as a parameter to a procedure.
And now the last word....
You call a procedure by name and it does whatever is in the procedure. This is because our friendly neighbourhood QL sees the procedure name as a keyword that you have added to the list that comes with SuperBASIC.
The name of a Function is NOT a keyword so you can't call a function by its name. If in the above example you had a line:-

100 CHANCE (100)

you will get an error message. You must type

100 LET F = CHANCE(100) or
100 LET RANDOM_NUMBER = CHANCE(250) or whatever.

A function must have a keyword associated with it, in the above case the associated keyword is **LET.** (As mentioned above, QL remembers the random value, or at least where it's stored, but in the next example he soon forgets!)

PRINT #3, CHANCE (5) uses another keyword to invoke the function **CHANCE.**

It is the same as **PRINT #3, RND (1 TO 5)** in our function.
I just hope your head is swimming as much as mine is!

PRECEDENCE

Take the expression 3+7/2

Does it mean3+7=10, now divide by 2, answer 5 or
divide 7 by 2 and add the result to 3, answer 6.5?
To help solve this problem QL assigns a 'precedence' to operators (+ - / etc).
QL tries to evaluate an expression from left to write, but does the bits with a "high precedence" first. Division has a higher precedence than addition so QL gives the answer 6.5. If you meant the answer to be 10 then you can alter the way QL evaluates an expression by means of brackets. Stuff inside brackets has a higher precedence.
(3+7)/2 now equals 5 because the brackets ensure that 7 + 3 is evaluated before /2
See page 35 of Concepts for a precedence list.

Now a word or three about programming style. Everyone writes a program in different ways. I talked about LOCAL last time. When you look at other peoples' programs you will notice that some cram all their PROCS with LOCALs while others hardly use them at all- that's their style. Lots of LOCALs does not equate to lots of skill (often the contrary in my experience)!...

I don't recall ever defining a function. I use procs - that's partly my style and partly my habit. I used to have some machine code that added procs to the Spectrum, I guess I was so entranced that I never missed functions.
If your program works that's fine- there'll always be a different way of doing it which will probably be better. You'll 'twig' better ways as your expertise grows. A prog on which I am working has shrunk by about 30%, is twice as fast and does more, but the original worked fine so what the hell!!
No matter how well you write a program someone else will think of a better way of doing some part of it. That's in the nature of things. Don't let it stop you from bashing the keyboard!
Another programmer decides he likes Functions and his prog will consist of little else! That's his style.

A little while ago there appeared in QUANTA a routine which prints text without a word being split over two lines. I used an almost identical routine in some of my own progs. It is slow and 'twitchy' because it has to find the length of each individual word and then test to find if there is enough room on the current print line for the word.
Then when translating a French adventure I found a function to do the same thing blindingly fast (compared with the original). When I saw it my first reaction was "Why the hell didn't I think of that?" - like all the best ideas it's so simple. But that is not the end of the story. I had just put the finishing touches to a short piece about this astounding routine for the magazine when an even better one appeared in the magazine! They both change a space to a newline character in appropriate places then print the whole text in one foul swoop. Like I said, there's always someone who will think of a better way to do something. Again I say do not let this put you off programming. Everyone learns by picking other peoples' brains.

I still want to hear from you if there's some aspect of SuperBASIC, or my ramblings, that isn't clear to you.

And now a little self-indulgence. Ignore fools who say things like "I'm a purist, so of course I never use GOTO". (They will always say 'of course'). This claim is both absolutely inane and self-contradictory. GOTO **IS PURE BASIC,** if you never use the word, how can you call yourself a purist? The guy who says it will tell you to use recursion, so next time I'll tell you what recursion is and why I use GOTO instead of it. Every language has GOTO in it, but it is usually thinly disguised.

Alan Pywell, 13 Sandyfields Close, Sea Lane, Saltfleet, Lincs, LN11 7RP. England.

Q L I P S

(The Species)

&

THE ORIGIN THERE-OF

by Hugh H. Howie.

How do YOU pronounce the above title?

I have heard many renditions, some horrible rendings, and have heard many comments, and have been asked many questions on the "QLIPS" title.

When I first decided to write a short column for the QL user in this Newsletter, I thought the column would consist of a compilation of notes, and the word "CLIPS" came to mind, being that the columns would be made up of short items, CLIPS.

This did not identify the computer, so I decided that I could change the C to QL and come up with a title that sounded the same as 'CLIPS' and would tell its own story. "Clips for the QL" or "QLIPS"

Soon I was told that someone had read something in my QUE-LIPS column. Now my lips are not that cute, especially at six in the morning! and at any time of the day I am more inclined to be LIPPY than CUTE. This does not do anything for my popularity but at least if folks are talking about me they are leaving someone else alone.

'twas not long before the phone rang and I was asked how much to send a parcel to Bonga Banga, and I had to say I had no idea. Next question:- How come you don't know how much to send a package to Bonga Banga if you are in the courier service..... Long time no see - I was a bit dim that morning, until I found that the caller had a QL to send to Bonga Banga and thought I was running the:-

Quantum Leap

International Parcel Service

AH Well.....

062992

Re-ink Printer Ribbons ?

I have been doing that for some time now, and there are a couple of things to be warned about.

The first is to be sure the ink you use is NOT a water based ink, as that can cause a lot of problems. Such as rusted pins in the printer. The ink must be of an oil based variety. One way to check this would be to place a drop of the ink in a saucer of water, and if it mixes it is water based, and if it floats in a blob on the surface, it is oil.

The second thing is to be sure and not try to use the same ribbon for too long a period. They get worn and stretched.

I was wondering why my printer seemed to be giving a sort of hazy print, until I looked at the ribbon, and it was as thin as tissue paper. Because of the constant pounding it had taken, the ribbon was stretched in the area that mattered, result was a very hazy print.

So be warned. Only use a re-inked ribbon for a short time, and then DISCARD it.

Hugh Howie.

Who is this clown?

DID YOU KNOW ?

When I make an occasional business trip I always take my 2068 along. Since motel rooms always have a TV everything I need fits into a briefcase. I take several TV adapters just in case.

I had hoped to have enough time to solve a Spectrum game named "Adventure". I had previously been unable to find my way out of the three initial rooms. At the end of the first evening I was only more frustrated - and still stuck.

The second night I made a copy of the program which was an NMI save and loaded up the Larken editor program. After identifing the blocks that held the program on disk I started examing them one by one. I discovered that there was a large basic program, some machine code and several strings of variables. I located the place where the basic waits for an input. I replaced some of the basic with LIST:STOP.

I reloaded the adventure and got it to list the program. I felt I was very clever until I got to the end where the program froze. After several tries I found I could break out during listing with the NMI-A keys. I then put in from the command line FOR L=1 TO 46: PRINT L;" - ";v$(L): NEXT L for the verbs and 1$ for the nouns it would recognize.

Armed with the vocabulary I finally figured out how to exit. One of the rooms had an "energy shield" and "enter shield" was the secret.

I soon recognized that I was not going to be able to finish the game in one setting. Scanning the basic had revealed a command to save the game in progress to tape, but I hadn't brought my tape recorder along. But since I now had a method for getting the program to stop why not change to disk commands. I reloaded the Editor program and determined where the machine code was loaded. Then I carefully recorded the address and code I was about to change and replaced some basic with
RND USR VAL "100": SAVE "a.Ca" CODE VAL "62340",VAL "3195":LIST
I saved the changes back to disk and reloaded the program. At my first input the drive started, saved the code and then listed. (VAL is used when making disk editor save modifications to avoid the problem that would occur by putting a number in without the imbedded code that always follows.)

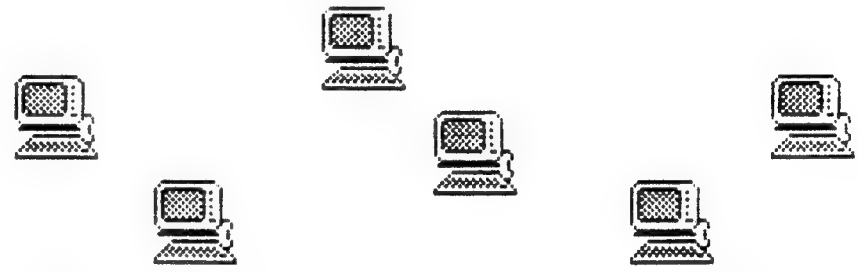
Now I broke with NMI-A and saved the basic as "B.Ba". Then I located the blocks for "B.Ba" and found the code I had changed I restored the code and saved it back to the disk. Now I had the basic program with variables back to their original state. I then located the tape save/load options at line 5010 and 5020. I added the appropiate RND USR VAL "100": and a Larken .Ba ext. Now I saved the basic as corrected and modified as "advent.Ba" LINE 20.

Finally I wrote a short loader program:

```
10 CLEAR 62339
20 RND USR 100: LOAD "a.Ca" CODE
30 LOAD "advent.Ba"
```

and saved it as "advldr.Ba" LINE 10.

Now when I load the program I can say "QUIT" and I am prompted to either "SAVE GAME" or "LOAD GAME" and I don't have to start over each time.



IBMs everywhere. I am sitting at my 2068 surrounded by IBMs. At the present time there are 6 IBM machines in my house:

- a 486 next to my 2068
- an XT clone in the living room
  these are from Joans office
- 2 386s and 1 XT clones in Kens room - he is a consultant teaching churches how to use WordPerfect and UMIS
- 1 XT that is Joans own.

I still prefer TS machines. (In addition I also have a TS1000 set up in the garage.) I use MacIntosh machines at work and I will do graphics work on the IBM machines on request. But the TS2068 still is MY computer. I have added this as a warning to others thinking of switching - don't sell your Timex goodies right away. I am fascinated with the fancy programs that Ken has but I still haven't learned all there is to know about the 2068 yet. After all it is my HOBBY computer!

Les Cottrell Cocoa. FL USA

A QUERY FROM ONE OF OUR MEMBERS
TS2068 Larkenized Oliger System
George Chambers

I had a request from one of our members, Larry Crawford, in which he asks for some information about the Larken cartridge used in his Oliger TS2068 system. I'll quote from his letter:

"Dear George,
"Thought that I would drop you a line to let you know that I'm operational once more. Solved the Oliger problem by replacing the computer. The Larken cartridge was more of a challenge.

"I found a couple of traces and a pad which managed to get messed up when I hacked out the IC's to instal sockets. But even after I patched them up, the board would not work. In desperation, I traced the whole board to produce a schematic. After I did that, the problem was obvious. Pin 10 of the '74 (the S terminal of the latch) went to a donut hole and nowhere else. To satisfy the logic of the chip, I put in a 10K pull-up resistor and now it works.

I have no idea what happened to the original one. What is on your cartridge? The hole connected to pin 10 is crammed in between the '74 and the EPROM.

I'm enclosing a copy of the schematic in case anyone else runs into problems with the board....." End of quote.

When I looked at my cartridge I found that it differed. Larry's cartridge is modified to work with the Oliger, and this evidently required that a small switch be installed on the cartridge. On my cartridge there is a trace from the donut hole that goes to the chip. Which pin is not evident from a visual inspection since the trace goes underneath the chip. But there is nothing wired to the donut hole. Larry's schematic shows pin 10 on the 74HCT74 chip going, via the donut hole, to the "OFF" side of the switch. The question is, what does your cartridge show?

I think we shall publish L.C.'s schematic. But I suggest that we will hold off until we get a similar one for the original Larken cartridge. If an Oliger-owning member wishes to have a copy in the meantime, just ask.

Steenbergen, 1st of May, 1992.

New England's Sinclair QL Users Group,
P.O. Box 8763,
Boston,
MA 02114 USA.

Dear Sir,

From a friend of me, I heard about your Sinclair QL users group. I find it very pleasing to know that people are still interested in this terrific Sinclair machine, despite the huge popularity of MS/DOS nowadays. Also in Europe, many Sinclair user groups are doing a great job in keeping the serious users united.
I myself have been working on a ZX81 (Timex TS 1000) since 1982, on a QL since 1987 and on an MS/DOS computer since 1991. Although the QL and MS/DOS machine are obviously much more sophisticated than the good-old ZX81, I still consider it great fun to work on my ZX81.
I am writing you this letter because I have developed three programs which the readers of your magazine may find rather interesting. These three programs are so-called emulators. An emulator running on computer A is designed to simulate an entirely different computer B at lowest level, i.e. the entire processor instruction set and hardware ports of computer B are emulated properly by computer A. The emulators I am developing are:

- **XTricator**: a fully compatible Sinclair ZX81 emulator for the Sinclair QL (emulates a 64k ZX81 with the unique QZDOS (includes subdirectories); supports ZX81 high resolution; it's multitasking, window manager & pointer interface compatible; speed: about 35% of original ZX81 in SLOW on a 8 MIIz 68008-based QL, up to 200% on a 16 MHz 68000-based QL)

- **Spectator**: a fully compatible Sinclair ZX Spectrum emulator for the Sinclair QL (emulates a 48k ZX Spectrum with Interface-1 and comes

complete with various disk conversion utilities; it's multitasking, window manager & pointer interface compatible; speed: about 35% of the original ZX Spectrum on a 16 MHz 68000-based QL, 55% on a 24 MHz 68000-based QL)

- **XTender:** a fully compatible Sinclair ZX81 emulator for MS/DOS machines (emulates a 64k ZX81 with the unique QZDOS; also supports ZX81 high resolution; speed: from 60% on an 8 MHz 8088-machine up to 900% on a 33 MHz 386dx-machine, and beyond)

Note that these are non-commercial products. I am distributing the programs as ShareWare. People who are interested can get a try-out version against cost price (viz.: two 3.5" DS/DD brand disks for XTricator, four for Spectator and two for XTender). Official registration amounts to Hfl. 50 per program (approx. $ 25, but I prefer checks in Dutch Guilders only).
The three emulators are already operational and have been tested with hundreds of existing ZX81 and Spectrum programs (mostly commercially marketed programs in machine code).
Instead of summing up the full specifications of the programs here, I first would like to ask you if you are indeed interested in these programs. If so, I could send you an article about one or all of the programs for publication in your magazine. If you wish, I can also send you a copy of the programs so that you can test them yourself and write an article about them in your magazine. In all cases, I would appreciate getting a reply from you at your earliest convenience,

Yours Faithfully,

Carlo Delhez,
Emmastraat 3,
4651 BV Steenbergen,
Netherlands.

Ronald M. Cavin II
1741 Marshlyn Ct.
Columbus, OH 43220 U.S.A.
614/538-1808

Dear George,

I have been involved in some very interesting things over the last several months which might catch the eye of some of your readers. Many of us in the Timex/Sinclair world have had to leave our beloved machines for, of all things IBM clones!! I happen to be one of those who was pushed into this mode a few years back. I now own a 386DX clone, with 70 meg hard drive, SVGA monitor, HD 3 1/2 and 5 1/4 disk drives, 2400 baud internal modem, and merit mouse. It's a pretty impressive machine, especially since I put it together with several scrapped PCB's. My cost for the system was very little.

You might ask, "What is he telling me this for?" Well, enter a public domain program called JPP-B2! This a Spectrum emulator written for anyone who has a 386 (or above) machine, with a VGA monitor! The program was written by a gentleman named Arnt Gulbrandsen in Norway. You should find a copy of the program enclosed with this letter. Feel free to distribute it.

Basically the program causes the 386 to operate like a Z80. Before you can fully utilize it, however, you must make a copy of the Spectrum Rom, and get it over to the IBM. There are several ways to do this. You could enter the Spectrum mode, and write a simple BASIC program to copy (POKE) the rom code from 0 through 16384 into ram beginning at location 40000. A second approach is to use an assembler and write a short machine code routine, using the LDIR command, and copy it over. In fact, some assemblers have the ability to copy code between locations with simple resident commands, thus eliminating the necessity for writing any move routine.

My preference was to enter this direct command: SAVE "SPECTR.C1" CODE 0,16384. This copies the rom to tape. (You cannot use this method to copy the Timex rom, since the first 8K of rom is paged. You get 8K of EXROM followed by 8K of HOME ROM). When the SAVE is complete, rewind the tape and enter this command: LOAD "" CODE 40000,16384. This puts the copy of rom into ram, beginning at 40000, extending through 56384.

The last step is to make a copy of rom to disk. Enter the following Larken command: RANDOMIZE USER 100: SAVE "SPECTR.C1" CODE 40000,16384. Now we can move full steam ahead. Next time we will transfer the rom code from the Timex to the IBM. I'll discuss this fully next article. Meantime, refer to NOV-DEC '91 and MAR-APR '92 issues of SINC LINK for a preview.

See same letter page 16, 10/4

Program Review

by Jeff Taylor

Owners of the SMUG digitizer should be aware that John McMichael has produced three additional programs for the digitizer, *VIDEOTEX* to replace the originally supplied software (EYE-BY-NIGHT), *VIDEO 3D* for 3D images, and *VIDEOCOPY* for use with John's printer interface and the Okidata colour printer.

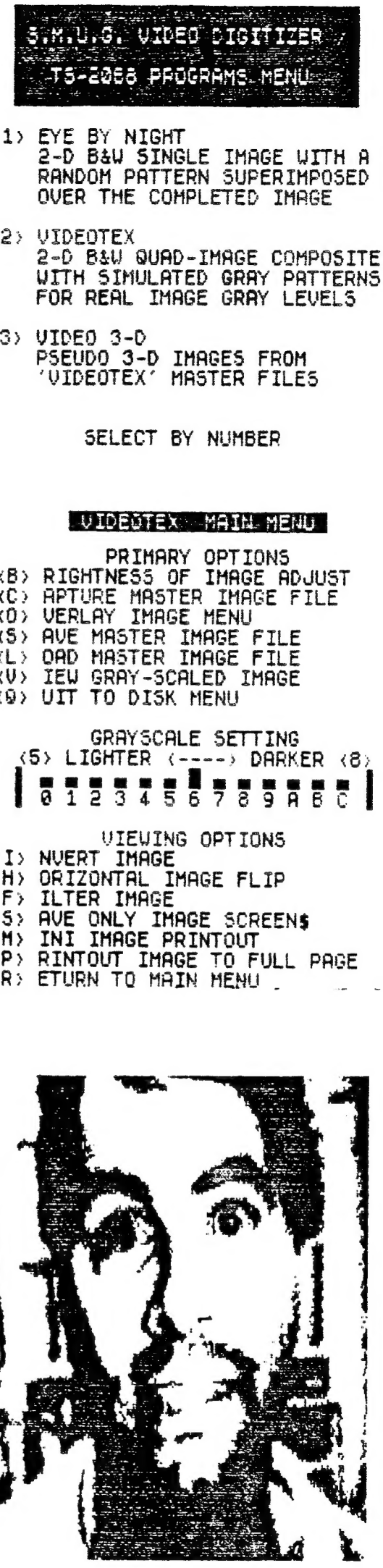
Robert Shade has gone a step or two further by modifying John's programs to make them more colourful and to utilize the Larken Ramdisk and disk system.

As supplied, Robert's disk presents a menu to choose either modified version of *EYE-BY-NIGHT*, *VIDEOTEX* or *VIDEO 3D*. Opting for *VIDEOTEX* presents a screen somewhat similar to the original but much more colourful. This screen allows you the choice of initial digitizer set-up (ie brightness control), image capture, save and load routines for master image files, and the ability to view and alter the gray-scaled image. The screen also shows which keys to use while viewing the image (ie invert, flip, filter and print, etc).

While the program does not produce better images than the original, Robert's interesting use of colours (he's a professional photographer) makes for a more polished suite of functions, particularly for the Larken user.

Having received John's permission, Robert can supply legitimate owners of *VIDEOTEX* and *VIDEO 3D* with his modified versions.

For more information contact: Mr.John McMichael, 1710 Palmer Drive, Laramie, WY 82070. And/or Mr. Robert Shade, 3210 North Broad Street, Philadelphia, PA 19140.



Sept 14, 1992

Sept/Oct 1992

Dear OOT members,

Recently I have been playing with an SPDOS disk system, designed by Abbeydale, in England. I think it was sold in USA by RAMEX, and known in our circles as a RAMEX system. . Included is a Larken cartridge to convert it to a Larken system.

The Larken system is the earlier LKDOS, not the V3 issue of LKDOS. I wonder whether any of you have such a system; did Larry K. put out a version 3 LKDOS for the Ramex? Probably the EPROM would have the suffix "-R3". Do you have one?

I also have an A & J wafadrive system with 19 cartridges. I have not got around to experimenting with that, yet!

WHat has also kept me busy is reading through all the Spectrum magazines that I also picked up recently. There's a lot of interesting material in them that I'll have to adapt for articles for our newsletter. And I see all manner of games tips/reviews for games that I have.

Some time ago I went through all the Spectrum magazines I have and, using Pro/File, logged in every reference to games reviews/tips. I shall do the same with all these new magazines, also. Anyone want any games POKEs or tips? I see where Jeff has a request in this month's newsletter for assistance for the adventure program "ALIENS".

Do any of you have printer driver software put out several years ago, by Peter Hacksel? Among the routines is one that is designed to print out a screen image in grey-scale. My copy is corrupted. It is called "color61000".

Bill Pederson, who used to market Timex software under his company name "Widjup" has an article in the Indiana T/S club newsletter this month. Jeff Taylor and Rene Bruneau met him at the Dayton ComputerFest this past month. He has an interesting tale of personal woes, which put him and his company out of busness for a spell. Another of our club members, Larry Crawford, is working on a hardware project conceived by Bill. I am interested in seeing how it turns out. I have dropped Bill P. a line, to sort of entice him into the fold. Who knows.

I confessed to Bill that I had put some of his old software onto one of our club disks, and asked if he preferred that we withdraw it!

Last month I said that I would include a list of the latest Larken library disks with the newsletter. But I forgot until the n/l's were sealed. So they'll go out this time, to all Larken owners that I can identify.

Speaking of articles for the newsletters, do consider writing one for our newsletter. This is what makes our club and newsletter so strong. So many of our club feel strongly enough to contribute to it. All you who have not contributed, give this a thought.

I simply don't have enough on my mind right at this moment to fill up another page. Sorry about that.

Sincerely, George Chambers

TORONTO TIMEX-SINCLAIR USERS CLUB
September 13, 1992

14 Richome Court,
Scarborough, Ont. M1K 2Y1

Les Cottrell
108 River Heights Drive
Cocoa, FL 32922

Dear Les,

Received the disks, and the $2. Thank you very much. Thank you also for the Mscript files of INDEX. I had just asked Bob Mitchell to send me a copy of his MSDOS disks and was going to do the same thing. But I shall use yours instead!

I shall put this information in a club disk sometime when I have figured out how to make up the disk. I have several miscellaneous data bases that I would like to get out. They are a mixed bag. Some of them are Pro/File files, some are Basic programs, others are Mscript files, and Tasword files. A really mixed bag.

Glad that you were able to pick up a second 2068. It surely makes one feel more comfortable having a second one around. In my OOT letter I mention that I picked up still another one. This one has all the bells and whistles (except an RGB interface). It has a reset button, a switchable Spectrum ROM, an NMI- button, an ON lamp, and another lamp whose purpose escapes me!

I shall get this brief note off with the newsletter.

Sincerely, George C.

Disk #40 NMI-SAVE TO TAPE (1 DS 40 tps)
A suite of programs designed to move 9-track NMI-type program

Disk #41 LOGICALL (1 DS 40 tps)
A Disk Management System developed by Bob Swoger, In addition to the disk management program this disk contains a suite of other interesting programs related to the Logicall system,

Disk #42 TASWORD REFINED (1 DS 40 tps)
Larry Crawford has been at it again! This time a disk which contains a considerably reworked Tasword, Has a lot of new and interesting capabilities added to it,

Disk #43 WIDGUP UTILITIES (1 DS 40 tps)
A collection of older programs by Bill Pederson, These programs are rather dated, but they contain a number of interesting techniques which would be of interest to programmers of the TS2068 computer,

Disk #44 24-PIN GRAPHICS (1 DS 40 tps)
A 24-pin graphics and screen copy package written and put to disk by Larry Crawford, Useful for all owners of 24-pin printers,

Disk #45 VOCABULARY (1 D)
A speech synthesis project for the TS2068, Select words from the library (this disk, and use them in your progra interesting disk,

Disk #46 LANGUAGE TUTOR (1 DS 40 t
A suite of programs written by Joan Kealy, A tutor for the French and Germa languages, Improve your foreign vocabul

Disk #47 MISC, PROGRAMS (1 DS 40 tp
A variety of interesting programs fo TS2068 which have been assembled by G, Chambers,

HAVE Disk #48 SPECTRM BOARD GAMES (1 DS 40 t
A collection of more interesting bo games, Will only work on the Spectrum o Spectrumized 2068,

HAVE Disk #49 SPECTRM SKILL GAMES (1 DS 40 t
A collection of interesting Spectrum games requiring skill rather than quickn of physical response,

Disk #50 SINC-LINK FILES (1 DS 40 tp
A collection of files taken from Sino-Link articles written by G, Chamber

****